

Archive

The Subscription Magazine for Acorn Users

£2.50

July 1995

Vol. 8 N° 10

JULY
'95

Interfacing the NC100

Clan Acorn Column

Acorn World 95

Basic Programs in a Task Window

Hardware Jottings

WYSIWYG for £-sign

REVIEWS: EasiWriter Professional,
Font Emporium CD-ROM, Garden Wildlife CD-ROM,
Hermes – The Desktop Messenger, NetCDFast,
NStore Version 4, PAL Encoders, PDCD 2 from Datafile,
Rainbow, Shares from Apricote.

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Promoting Acorn

Acorn have had a couple of very positive mentions in non-Acorn magazines just recently. The first was in a design magazine called *Creative Technology* in which an Acorn DTP setup was reviewed by the editor and got very favourable comments. In *The Mix*, a music technology magazine, Sibelius 7 got the thumbs up in a four-page review with comments like, "blindingly fast... you have to see Sibelius in action to believe how fast it is" and "a pretty desirable piece of kit".

Come on, let's keep the Acorn flag flying! We are the ones who know just how good Acorn kit is. If you have begun to doubt it, try using Macs and PCs for a while. Yes, Sibelius *is* fast – but not all that fast compared with other applications we take for granted on Acorn machines. Don't make exaggerated claims for Acorn, but where it does beat the opposition, let's say so.

Promoting Archive

Six months ago, we stopped advertising in the other Acorn magazines. Even so, in that time, we gained about 400 new subscribers! My conclusion is that the most effective form of advertising must be personal recommendation which, presumably, carried on despite the lack of advertisements.

Would you be prepared to help increase the Archive readership? (The more subscribers we have, the more contributors we have and so the better Archive will become.) All we are asking you to do is to take the enclosed leaflet and encourage a friend, colleague or family member to try Archive out for a couple of months – FREE OF CHARGE. If they then take out a subscription, those two magazines count as the first two of the twelve issues for which they are paying. Fair enough?

Preserving Archive

I said last month that we were getting a bit short of articles. Several people sent us articles in response – for which, many thanks. However, as you will probably have gathered from the thickness of Archive this month, we're still a bit short. So, if you have idea for articles you would like to write, do let me know and we'll make sure that Archive gets back to full strength (thickness) next month. If you can't write but have ideas of what you want to hear about, let us know and we'll ask people to write the articles you want.

Once again, thanks for your support for Acorn and Archive!

Paul Beverley

Government Health Warning – Reading this could seriously affect your spiritual health

"I wish I had your faith. Even when things are going wrong, you still seem to be able to laugh and smile." Well, the person who said that obviously didn't see me at the blackest phase of my depression last year. OK, maybe there is an element of truth in it – certainly, I'm full of rejoicing at the moment because I have seen God doing some wonderful things in people's lives... but that's another story.

"I wish I had your faith, but I just can't believe in..." It's not all benefits, you know! I'm not a Christian for what I can get out of it. Yes, there are a lot of benefits but, in many ways, it's often very hard being a Christian – for example, if you do one thing that others think is wrong (and being a Christian doesn't make you perfect overnight), you get the "and you call yourself a Christian!" treatment. No, I'm a Christian because, from the weight of evidence I have seen, I think that the claims that Jesus Christ made are true.

Do you really *"want to believe"*? If you do, it's not difficult. All you need is a bible, a brain, a heart and a little bit of honesty. The honesty is needed because often, as we begin to see the *consequences* of believing, we make a sidestep. Each time the weight of evidence on one point builds up, we jump to something else. *"But I can't believe because..."* So, don't say *"I want to believe"* unless you are prepared to face the consequences. *P.B.*

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Contents

Volume 8 • N° 10 • July 1995

New / Special

Acorn World 95.....	13
Basic Programs in a Task Window	43
Charity Sale	28
Clan Acorn Column	51
Hardware Jottings.....	9
Interfacing the NC100.....	39
WYSIWYG for £-sign	47

Regular

Comment Column	17
Club News	28
Gerald's Column	32
Help!!!!	25
Hints & Tips	14
PD Column	29
Pocket Book Column.....	44
Products Available.....	2
Puzzle Corner.....	15
Risc PC Column	37
Small Ads.....	26

Reviews

EasiWriter Professional	55
Font Emporium CD-ROM	45
Garden Wildlife CD-ROM	61
Hermes - The Desktop Messenger	59
NetCDFast	49
NStore Version 4.....	52
PAL Encoders	63
PDCD 2 from Datafile	41
Rainbow.....	54
Shares from Apricote	57

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Products Available

Acorn PC cards – Acorn say that they have now distributed all of the first 10,000 Risc PC 486 PCcards and that there won't be any more available now until August. If you are still waiting for one, the only option we can offer is to supply an Aleph One version at cost. The DX40 is £406 and the DX2-66 is £466 (i.e. £290 and £350 respectively if you have already paid for your Acorn card), but this does NOT include a copy of DOS. (N.B. *We can only sell at this price to those already on the waiting list.*)

Ancestry II – Minerva have updated Ancestry, based on feedback from users. Features of particular interest are import and export of GedCom data, variable field lengths and linking of text files. Ancestry II is also fully multitasking. The price is £99.95 inc VAT or £95 through Archive. Registered users of Ancestry should have received details of a special upgrade offer.

Bell-ringing simulator – John Harrison has developed a program called Strike which is designed to help develop bell-ringing listening skills – basically a self-teaching aid for bell ringers presented in the form of a game. This costs £15 inclusive from John, and £10 of that goes to restoration work. You've heard of shareware, freeware and careware, well, this is belfryware! Send cheques to John at 2 Murdoch Road, Wokingham, RG40 2DA.

CD-ROM Mastering – Eesox are continuing to offer a CD-ROM mastering service, costing £60 +VAT. Data can be submitted on

650Mb magneto-optical disc, or SCSI or IDE hard disc. Most jobs can be turned around within 24 hours. As an added incentive, anyone purchasing an Eesox CD-ROM drive will receive a voucher giving a 50% discount on the production of a CD-ROM.

Celebration – A collection from Clares Micro Supplies of four applications on the theme of celebrations. Banner can be used to create both horizontal and vertical display banners using outline fonts, draw and sprite files. Calendar is designed for monthly or yearly calendars – a number of formats and languages can be used. Certify will produce personalised certificates with the names being entered individually or from a text file for multiple names. Giftwrap allows the creation of wrapping paper, as well as other pattern creation and textile design. A single user version costs £34.95 including VAT. A site-licence, covering an unlimited number of machines within the named site is available for £82.25 inclusive.

Cine Works – Oregan Developments have produced a sophisticated 32-track video mixing and editing studio, combined with 16-track audio capabilities. Video clips may be mixed together using a variety of transitions which are typically found in professional video editing environments. Transitions range from standard wipes and fades, to more adventurous central zooms and mosaic cuts. Full vision correction controls are provided so that Replay and MPEG clips may have their brightness, colour and contrast adjusted at any time after they

Archive Monthly Disc

- ◆ Basic programs in a task window, Brian Cowan and Martin Dann – page 43.
- ◆ Borders for Impression from Cain Hunt – see Hints & Tips on page 14.
- ◆ CableNews demo – see the review last month on page 71.
- ◆ NC100 communications programs from David Holden – page 39.
- ◆ Demo version of Robert Lytton's Report program – see Products Available page 4.
- ◆ French verb-testing program from Graham Campbell. This is a freeware product.
- ◆ Printer set-up program from Ray Favre – page 47.

have been captured, and even varied throughout the clip. The price from Oregon Developments is £159.95 inclusive or £152 through Archive.

Composition – This is a new art package for the Risc PC which enables object-based operations to be carried out on bit map images. Each image is treated as an object and effects applied appropriately. Features include image processing options, tints, shadowing, gamma and colour curve correction, sprite trimming, mask editing, rescaling and distortion, OLE of sprites to other applications, fully adaptive anti-aliasing of text using outline fonts, import of sprites, clear, JPEG, TIFF, TGA, PCX, PBM, BMP, PhotoCD, Draw and Artworks files, export of Composition format (retaining effects and features) or sprite, JPEG, Clear, TGA or PBM formats. The price from Clares is £169.95 including VAT (or £158 through Archive) and special offers are available for users of ProArt24, and other art packages – contact Clares for details.

Digital Darkroom – A new company, based in Kent, the Digital Darkroom offers a conversion service for Acorn Computers. Colour slides or negatives can be produced from sprites and drawfiles images – especially useful for presentations. A single slide costs £7.50, but orders for larger quantities will be considerably lower (20 or more will cost no more than £3.50 per slide). Regular users will also be offered a preferential rate. Documents, film and video taped images can also be transferred to Acorn format files. Quality of such images will be dependent upon the source quality.

Digital Symphony Masterpieces Collection – We mentioned this CD-ROM last month but, unfortunately, got the price wrong. It costs £24.95 inclusive from Oregon Developments or £24 through Archive.

DTP book – Following the success of Robin Williams' book on DTP design ("The Non-Designer's Design Book") we got hold of a copy of "The Mac is not a Typewriter" to which she refers several times in NDDDB. Although, as the title suggest, the book is aimed at the Mac market, there is very little that is different on the Acorn machines, and I have prepared a supplement sheet to go with it so that it can be used for those using Acorn

machines for DTP. Here's what the official blurb about it says...

"The Mac is not a Typewriter" by Robin Williams is one of the most popular Mac books ever sold (over 300,000 now in print). It covers the top twenty things you need to know to make your documents look clean and professional: em dashes, curly quotes, spaces and indents, white spaces, etc. It's a primer that novices can pick up quickly, and that pro's can keep going back to. It is the winner of the 1991 Benjamin Franklin Award, Computer Book Category.

My view, for what it is worth, is that it's another excellent book by Robin Williams. I have to admit that it it can't compare with NDDDB in terms of value for money (£10 including p&p through Archive cf £13 for NDDDB) but, to be fair, NDDDB is exceptional. So I would still say that The Mac is not a Typewriter is well worth the cost and, to support my claim, I will again make the same offer of a complete money-back guarantee if it is returned within 14 days. I know I'm on a winner there because, out of the *hundreds* of copies of NDDDB we have sold, we haven't had a *single one* returned.

Graphing and Charting – As mentioned in last month's IHelp column, Chris Johnson has released his collection of graph and function plotting applications. The applications are Graphdraw, ChartDraw, Multiplot, FnPlotter, Surface, 3DFnEdit and Text>Draw. The price is £4 inclusive, direct from Chris Johnson, 7 Lovedale Grove, Balerno, Edinburgh, EH14 7DR.

iSV Product Guide – iSV have produced issue 3 of their product guide, containing details and samples of nearly 600 RISC OS 3 fonts, along with information regarding their software products. The product guide is free and a demo disc is available for £2, both direct from iSV.

NetMail – An extension to Archiboard, this package offers a consistent WIMP front end to email and news groups within a school. It is designed to operate over any AUN compliant network, allowing email and conference articles to be retrieved from the Archiboard server. Due to the consistent interface, information can be retrieved from Internet, FidoNet or the local system in the same way, so staff and pupils do not need to learn separate systems.

Products Available

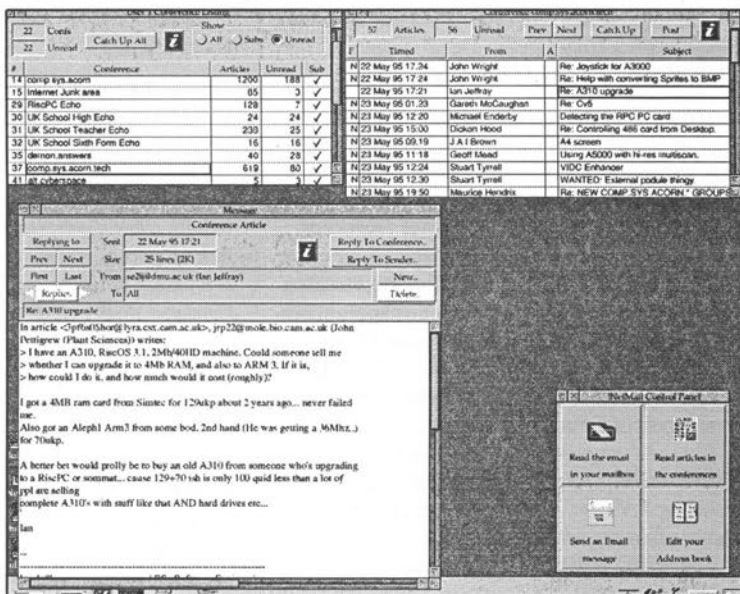
MIME support is also included, which allows files to be attached to messages for sending via any of the networks, although the recipient will need MIME support to extract the message. (MIME clients are available for most platforms including Mac, PC and Unix workstations.) Prices start from £80 +VAT + p&p from Supreme Software Solutions.

Network Cybernetics VR CD-ROM - Lambda

Publications can now supply this CD-ROM which holds a collection of virtual reality, telepresence and computer simulation development tools. Included are virtual reality development tools and sources, VR hardware interfacing source code and documentation, VR & simulation research papers and conference reports, simulation packages for many different fields of science, simulation development tools and sources, 3-D modelling utilities, development tools and sources, and a collection of 3-D object data in several file formats. The CD costs £65 including p&p and is supplied on 30 days evaluation. Existing customers and Archive readers can purchase it for £45.50.

Oxford Talking Infant Atlas -

Sherston Software have released an updated version of their Oxford Infant Atlas, aimed at Key Stage 1 Geography. The software features optional labels for country, places and other geographical features, quiz questions to ask children to identify geographic features, sampled human speech for all sentences, place names and labels, along with animations and sound effects. The price is £20 +VAT for a single user version (or £22 through Archive) and an accompanying paperback atlas is available from Sherston for £2.80.



Patience Addict - Creative Curriculum

Software have released a collection of twenty patience games, including one and two pack games, of varying levels of difficulty and complexity. The single user version is £12.73 +VAT.

Plantwise - Sherston Software have produced an interactive graphical database designed for 9-14 year olds, similar to their earlier database, Bodywise, with the addition of an interactive experiment section. Included in the pack are three discs, a set of experiment cards, a set of question cards, a user guide, and a booklet showing how to use Plantwise in the classroom. It costs £44.95 +VAT from Sherston Software or £50 through Archive.

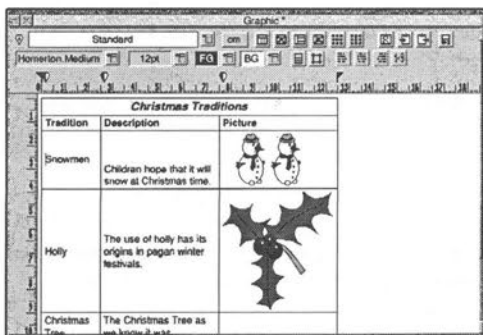
Purple Software - A range of products from Purple Software is available now for the Psion series 3 and Acorn Pocket Book range. There are currently five products: DataView (£59.95), an enhanced database with table view, sorting, label printing and mail merge; File Manager (£39.95), for extra control of files, directories and SSD's; FloChart (£49.95), a free-form flow chart designer; OrgChart (£49.95), a free-form organisation chart designer; DrawIt (£49.95) an object-based drawing package.

RecordZ – The database section of FireworkZ pro is now available as a stand-alone database from Colton Software. The price is £99 +VAT or £110 through Archive.

Report – This is a program for hard-pressed, report-writing teachers. It has been designed as a tool to speed up the process of writing reports, by inserting often used phrases and comments into a sentence. The writer reckons that the whole report-writing process can be speeded up by a factor of 10. The price is £14.95 for a single user or £29.95 for a site licence. Until August, there is a special launch price of £9.95 and £19.95 respectively. A demo version is available for £1 (*refundable on ordering*) or by sending a stamped addressed envelope and disc requesting it. Report is available from: Robert Lytton, 7 Helmsley Drive, West Park, Leeds, LS16 5HY. (*The demo version is on this month's program disc.*)

Sibelius showroom – Sibelius 7 now has a dedicated London high-street showroom at Turnkey, 114-116 Charing Cross Road, WC2H 0DT (0171-379-5148) (0171-379-0093). The new showroom gives customers the opportunity to compare Sibelius on the Risc PC with a 486 PC running Windows software so that they can judge for themselves which is best!

SOS – Save our Squirrels!! – Denis Bastaple, a former director of Digital Services Ltd, bought out the rights to Squirrel and other software when DSL went into voluntary liquidation. Squirrel, Armlock, Netgain (Econet and Ethernet), Waiter, Digistore and Archway are now all available from, and fully supported by, DSL Supplies.

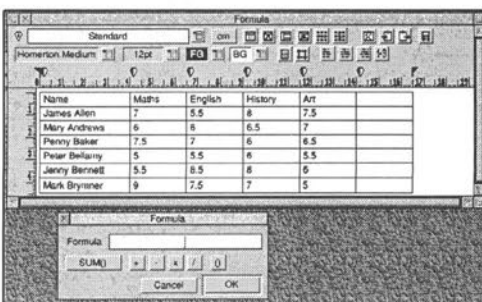


Studio 24 has had some major updates and the new version will be available very soon. The full price is £199, or £189 through Archive. The upgrade for existing users will be FOC through Pineapple Software.

TableMate 3 – Dalriada Data Technology have raised their comprehensive table-making application to version 3, which incorporates some worthwhile improvements and is available from Dalriada for £32.50 inclusive. Anyone who bought TableMate 2 on or after 1 March 1995 may upgrade to version 3 for £2.50, otherwise the upgrade from v2 costs £5. Send your remittance and original disc to Dalriada. Upgrade from earlier versions is currently £10-£20, depending on the variant (e.g. as bundled with Impression). Contact Dalriada for an upgrade price.

New features include: button bar similar to Style or Publisher, use of desktop interactive help with button bar, OLE to !Draw, Formulix etc, simple spreadsheet, right & left justified and centred text, import & export of CSV files, automatic addition of quotes for headers in CSV files, vertical ruler, vertical tab (top, middle or bottom of cell), vertical joining/splitting of cells, multiple rule-offs between columns and/or rows, reorganised menus, currency character control, £ default, colour picker RGB, HSV, CMYK, more Impression compatible keystrokes with the option of using the old TableMate2 ones.

Technology and Design CD-ROM – NW SEMERC has set up this CD-ROM to make pupils at Key Stages 2 and 3 think about technology and design in everyday life. The CD isn't just confined to the Design and Technology department, but can be used in Maths, English, Geography and



Products Available

History. Everything is based on the town of 'Skegton', with pupils seeking ways of improving the daily life of its inhabitants. The Technology and Design CD-ROM is available from Northwest SEMERC, price £49 +VAT.

Teletext+ – Octopus Systems, who purchased the remaining stock of Ground Control Teletext adaptors, have announced a new version of the controlling software, which incorporates a number of new features. Frequently used pages are cached on disc, thereby improving response times. Sub pages are also cached, so you no longer need to wait for the page you just missed to come round again. Keywords can also be searched for to find important information automatically; the search can take place over all pages or just on likely pages, so you can search for a particular television programme, for example. Pages can be exported as teletext, sprite or plain text formats. The software upgrade for existing Ground Control teletext cards is £39, including p&p and VAT. If you would like the teletext hardware as well as the software, the package is £165 inclusive, while stocks last.

T_EX and L_AT_EX for RISC OS – A new implementation of the powerful typesetting language T_EX, complete with the latest version of L_AT_EX and lots of other goodies is now available for RISC OS computers. It has been ported from the world of Unix by Mark Sinke in Holland, and is coordinated in this country by Robin Watts at Oxford University. It is freely available by ftp from ftp.comlab.ox.ac.uk in the directory /tmp/Robin.Watts/TeX, or from good PD libraries.

UK Habitats – This new resource CD-ROM from AVP Picturebase gives details of a number of habitats in the UK. The aim is to give an understanding of the variety of living things, and of the way they survive and compete for resources. Habitats covered include Deciduous Woodland, Urban, Farm Land, Sand Dune, Fresh Water, Salt Marsh, Sand and Mud, Roadside and Hedgerow. The single user educational price is £99 +VAT or £150 +VAT including a site licence from AVP.

World Data for primary schools – The Centre for World Development Education (CWDE) have now released the World Development Database for use in primary Schools.

This is the result of a collaboration with Sheffield Hallam University who produced the Database Project book included with the pack. The book includes ideas for data handling in English, Geography, Mathematics and Science at Key Stage 2. The User Handbook contains practical information about the datafiles and fields. The large amount of data in the original version is retained, but a SlimWorld file has been added with easy-to-understand field names. Acorn and PC versions are available, with data in KeyPlus/KeyNote (Anglia), CSV and Text formats for import into most databases. A single user pack includes a User Handbook, a Database Project book, the World Bank's "Development Data Book", supplemental 1991 Data Sheet and data disc, and costs £25 +VAT. A class set containing all the above, reproducible data disc and two extra Data Books, is available for £45 +VAT from CWDE.

World Habitats – This is another CD-ROM in the AVP Picturebase series, containing pictures, written text and spoken word, covering the world's major habitats. Comparisons can be made by choosing elements from different modules. Possible uses include covering impact of human activities on environmental systems, the occurrence and effects of natural hazards, and the need for management and conservation of fragile habitats. Habitats included are Mountain, Alpine, Desert, Mediterranean, Tropical Mountain, Savanna, Polar and Temperate Forest. The single user educational price is £99 +VAT or £150 +VAT including a site licence from AVP.

Review software received...

We have received review copies of the following:
•CineWorks (pre-release) (m), •Composition (a),
•Graphs & Charts (eu), •Report (e), •Strike
(ge), •Textease Templates (u).

e=Education, b=Business, bk=Book, c=Comms,
g=Game, h=Hardware, l=Language,
m=Multimedia, u=Utility, a=Art.

If you would like to review any of these products, please contact the Archive office. Potential reviewers will need to show that they would use the product in a professional capacity or that they have some knowledge of the particular field. ♦

The Non- Designer's Design Book

"A pleasure to read and, consequently, easy to digest. I learnt (and remember) more from this book than from other sources I have read in the past."

"An excellent book which I expect to be in regular use."

"It's made a complete difference to the way I look at text—even with ordinary wordprocessing, let alone page layout."

"If I had had this book a year ago, I wouldn't have wasted £300+ on a DTP correspondence course."

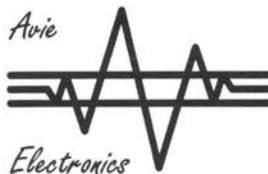
£13 through Archive

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and
typography
principles
for the
visual
novice**

Robin Williams

**Peachpit Press
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Spares

Hard drive screws & shock mounts	£1.99	A300 main PCB (excl. OS)	£69.00
Assortment of popular nuts, bolts, etc.	£1.99	RISC PC second drive bracket	£4.99
1.44Mb floppy drive 3.5" (citizen)	£39.00	Mouse (Archimedes)	£14.99
800K floppy drive 3.5" (citizen)	£39.00	Mouse house	£2.99
Power splitter cable	£1.99	MEMC1a & PAL	£23.50
Avie mouse mat (durable plastic coated)	£4.99	Battery (PCB mounting)	£2.99
Mains lead (IEC- free end/US/Euro)	£2.99	PSU (A300)	£59.00
VIDC or IOC	£29.00	PSU (A3000)	£39.00
FDC1772	£19.00	PSU (A5000)	£49.00
Clock IC 8583 (std/SMD)	£9.99	Custom cables	from £11.75
Assortment of popular nuts, bolts, etc.	£1.99	A5000 serial IC SMD	£11.75
SCSI, IDE, floppy, power cables	from £2.99	Reset switch	£1.99
IEC extender 6" (IEC male-IEC female)	£2.99		

Special

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Make your own high quality tough plastic coated mats with your personalized design sandwiched in-between.

◆ All prices include VAT where applicable. Please check availability before ordering. Courier delivery £9.99. Postage for smaller items £3.00. Minimum order £5.00. Items sold as used equipment are tested and working, but due to their nature are offered with a limited warranty. All new items are covered by a 12 month guarantee. Repairs carry a 90 day warranty (return to base) against recurrence of the original fault.

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◆ Avie Electronics operates a BS EN ISO 9001:1994 Quality System.

Hardware Jottings

Brian Cowan

One of the reasons for the disappearance of my Hardware Column has been the fact that I am no longer in the forefront of computer technology. I don't have a Risc PC and, at present, I have no plans to buy one. I am certainly very happy with my old Archimedes machines but all recent purchases have been 486-type PC computers (ugh! I hear you utter). I was tempted to buy a Risc PC but, with the delay in the appearance of the PC card, and the still-nonexistent Acorn Internet software, my purchases of PCs have been well-justified. Just think how embarrassed I would have been trying to hold up the Acorn banner to my PC and Mac-user colleagues.

Although I am happy with my second-generation Aleph One PC module and the PD version of Internet software, the latter is certainly no substitute for the real thing. So I am afraid these jottings will be concerned with hardware mainly for the old-style ARM computers.

270Mb SyQuest cartridges

About a year ago, I rather hesitantly decided to invest in one of the new 3½" 270Mb SyQuest drives. The old 44Mb 5¼" drives are getting a bit old and, in any case, 44Mb is rather small by today's standards. I had a further reason for trying these drives since I spent last summer abroad, taking my A4 with me, and I reasoned that a SCSI SyQuest together with an Atomwide Printer-SCSI dongle was the best answer to mass storage. What I really wanted was access to *all* the software on the hard discs of my computer at home and those at work.

Power requirements

I initially thought about powering the SyQuest from the A4. The drive specification stated that it required a little over one amp from the 5 volt supply which I decided was too much for the poor A4's battery. And a little research showed that, in quiescent mode, the drive drew some 700mA. So I decided that for use with the A4, an external power supply was called for. (I determined that the power could not be obtained from the A4's mains power supply.)

Disaster

This was all a great success. In particular, the printer-SCSI dongle worked like a dream. For some two weeks, I used my A4 extensively for my writing work, using the SyQuest, when required, powered from an external 5volt supply. However, all I had been doing was to *read* from the SyQuest.

At the end of two weeks, I wisely(?) decided to back-up the A4's meagre 40Mb hard disc to the SyQuest. Disaster!!! The SyQuest went berserk, its access light flashing on and off, with the mechanism clicking wildly. After resetting the machine, I discovered that I had trashed the disc, although I could still read from the second cartridge I had brought with me. I tried to back up to it and trashed that one as well.

As you can imagine, I was feeling pretty sick, although I had not lost anything irreplaceable. So long as I did not need anything that had been on the discs, I was OK. So I left the SyQuest alone until my return home.

Problem solved

I had plenty of time to muse on my misfortune and eventually things fell into place. The power supply was supposed to deliver a maximum of 1.2 amps. So when the head was moving, when maximum current is drawn, the supply was operating at its limit. Maybe it could not cope with the load. At home, I tried a more beefy power supply (actually, I pinched the 5volts from the A540) and the drive spun up OK and I was able to reformat the discs with no problem. After that, reading and writing them was no problem. The moral of the story is that although the newer SyQuests have relatively modest power requirements, you stint at your peril.

Second problem...

The next problem was rather strange. The SyQuest was mounted in an old 3½" disc drive case which used to hold a drive for a BBC. There was a SCSI connector to attach to the computer's SCSI bus and a power lead which plugged into a socket connected to the computer for the 5 volt supply. I discovered that, after disconnecting and reconnecting the drive, it would not work. It seemed completely dead! Once

again, I was feeling rather sick. So I left the drive and continued using the big 44Mb ones. A few days later, I decided to try the 270Mb drive and I found it was functioning perfectly. The same problem occurred on a number of subsequent occasions. I gather other people have also observed this. The usual observation is "sometimes the SyQuest seems dead".

...and explanation

Here again, eventually the penny dropped. The problem was some sort of static paralysis (rather like what sometimes happens with dongles). No permanent damage is done. I should add that with permanently installed drives, as I now have, there are no such problems.

Permanent installation

On the A5000 machines, there is space for a second 3½" drive below the existing one. It is possible to install a second 3½" drive in the older machines, but only if you don't have a second hard disc drive. As my home A540 has *two* hard drives stacked to the left of the floppy, there is certainly no room for the SyQuest to be mounted internally. Or is there? On careful measuring I discovered that you could mount a 3½" drive above or below the existing floppy if both are mounted horizontally. In other words the floppy is no longer sloping at an angle.

Plastic surgery

I removed the dark beige part of the front plastic housing and enlarged the hole above and below the floppy drive. Then I removed the floppy drive from its metal cradle and drilled new holes so that the SyQuest sat below, and the floppy above, in the cradle. Everything was screwed together and it has been functioning ever since – without the beige front moulding. Well almost! Actually, when everything was assembled and switched on, the SyQuest did not work. But this was just the static paralysis after all the handling during mounting. After waiting a few hours it *did* work and it has functioned perfectly ever since – some nine months. My computer at work has the external SyQuest, powered from the computer. Without interfering with the connections, that also has functioned without difficulty.

Auto eject

Readers might recall that I am a devotee of the Oak SCSI interfaces. Incidentally, these are now no longer sold by Oak, but they can be purchased from IFEL. These interfaces provide an option, really for CD ROMs, for automatic eject upon dismounting the disc. I discovered that this also works with the 3½" SyQuests (not the 5¼" ones). When you configure the interface's CMOS RAM you simply reply "Yes" to the prompt "Eject on dismount". I find this a very convenient feature. (*Nice one, Brian! Thanks for that! Ed.*)

High density floppies

Most PC software these days comes on 1.44Mb floppies. I originally purchased an Arxe systems combined SCSI and high density floppy controller. This was good because it provided two functions in a single podule. Eventually, I returned this card because of problems with the SCSI part. Also, the floppy implementation was a bit clumsy, with its own high density filing system, although it did operate OK with the PC card.

When I decided I *had* to have a high density floppy, I discovered that the Arxe card was no longer available and I kicked myself for returning the one I had. The alternative was the Beebug high density interface. With my experience of the Arxe, I ordered the Beebug interface with trepidation. It arrived and installation was painless. (I was able to purchase a high density drive that was significantly cheaper than the one Beebug had on offer.) Upon switching on, I observed nothing unusual – no new drive icons or anything. This is as it should be. The high density drive, which replaces the old one, is integrated into RISC OS and it is just as if you had an A5000. Also, access from the PC card is transparent. My only complaint is that the system uses up a valuable podule slot.

Cheap(ish) scanner

Another hardware purchase of mine has been a scanner. I chose a Mustek Paragon scanner which I found advertised quite cheaply in the PC press. Actually, it is quite a bargain since it comes complete with a PC SCSI interface and retouching and OCR software. Unfortunately, I could *not* get it to work with the Oak SCSI interface.

I had purchased David Pilling's ImageMaster and Twain interface software to drive the scanner. Over email, David was most helpful and it was he who suggested I try another SCSI interface. Thanks David. I discovered that everything worked perfectly using an Acorn SCSI interface. So the scanner is connected to a different machine. Not the same one as the LaserDirect, so I can't use the "photocopy" option. I am absolutely delighted with the results. The ImageMaster program is a delight to use, and it is a pleasant surprise to find software which automatically configures its SCSI settings.

The scanner has been used for such unusual things as scanning printed circuit boards and PCB masters, as well as the usual scanning of pictures and text. With a scanned PCB, with tracks changed to a colour such as orange, it is a rather quick process to trace over in Draw locked to a 0.1" grid to produce new masters. We need to do this since we have changed from a negative to a positive process, and it also provides an opportunity to modify old circuits.

Optical Character Recognition

Scanned text has been converted to machine-readable-form with Sleuth OCR. This also has been remarkably successful, as long as there are not too many scientific symbols. As well as providing the text in ASCII form, Sleuth has the facility to provide "style" information: bold, italic, large text, etc. It does this by exporting in RTF (Rich Text Format) – the document interchange format used by Microsoft's Word for Windows. However, the standard (such as it is) seems to be gaining popularity, with more programs supporting it. Impression now has very good RTF loaders and savers and the new version of Ovation will support RTF. Colton's Wordz and Fireworkz also claim to have RTF facilities. I have used Sleuth RTF output to import into Impression and the results are quite staggering.

Colour Card Gold

Having spent most of this article telling you that while remaining firmly rooted in the past, I have endeavoured to bring some of my machines up to date, I suppose I should finish by talking about graphics display and Computer Concept's Colour

Card Gold. I don't particularly want millions or even thousands of colours. What I do want is good screen resolution and no screen flicker. My colour card provides this on my Eizo 9070 monitor to perfection. I think I have explained before that there is software available to create your own colour card modes, although it is rather complex to use (at least I found it so!). However, with perseverance, I have created a 1024×768 square pixel mode with sixteen colours. This has a non-flickering refresh rate of 65Hz. The display is crystal clear and, as a bonus, there is no CPU speed degradation. For this alone, the colour card is worth every penny. However, for use with the PC card's programmable display facilities, I have created an 800×600 square pixel mode of 256 colours for a really good Super VGA display in Windows. This also has the position adjusted so that the picture stays centred on the screen when the mode is changed. ♦

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Acorn World 95

Beverley Adams

Beverley Adams from Acorn Computers lets us in on what's in store at Acorn World 95...

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Hints and Tips

Debugging via the Serial Port –

(Unfortunately, we had problems importing the text into Impression when we put this hint in last month's magazine. Sorry for any confusion that we caused – it was our fault and not John West's! The correct version is as follows...)

The `os_cli` line makes use of the system redirection to send the text to the serial port, and so it should have read:

```
os_cli("echo Start of initialise()  
      { > serial: }");
```

More details of redirection can be found on page 419 of the RISC OS 3 User Guide. The new Acorn C/C++ does not support `os_cli`, so you should use `_kernel_oscli` instead.

From Basic, the `OSCLI` command is the direct equivalent.

```
OSCLI "echo Start of PROC_init  
      { > serial: }"
```

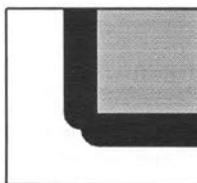
John West, Surrey

Disc protection – Of the 100+ readers' floppy discs I've processed over the last few months, there was a fair smattering of broken cases, mangled sliders and disc errors. In every case, the defective discs had been sent in paper envelopes without further protection from the rough and tumble of Her Majesty's mails. This prompts me to repeat Ed's recommendation of many moons ago that it is well worthwhile giving your discs adequate protection in the post. Jiffy bags or board-backed envelopes cost only a few pence from stationers and, provided any covering documentation is limited to a couple of pages, you are unlikely to exceed the 60g limit for 19p/25p postage.

Jim Nottingham, Pocklington

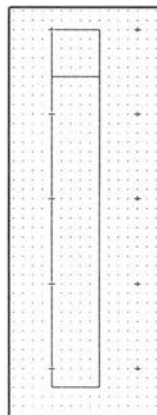
Impression borders – The built-in borders in Impression provide ¼ point, 1 point and 4 point thick black borders (numbers 1, 2 & 3), but how do you get a 5 point border? There is no way for the user to specify the thickness and, also, the

lines don't join properly at the corners, as you can see...



Here is a simple way to make your own line borders using Draw:

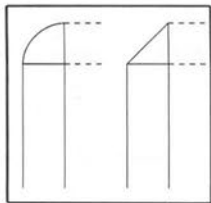
Create a new Draw document and set the zoom to 8:1. Show the grid and lock to it. Set the grid spacing to 0.125 inches with 9 subdivisions – since one point equals 1/72 inch, each subdivision is one point. For a 5 point line make a rectangle 5 squares wide and about 30 squares deep. To make the corners square, you need to make a 5 by 5 square immediately above the rectangle.



Finally, set the fill colour of both to black and the line colour to none and save the file in your border directory.

You can also make curved or bevelled joins by changing the corner square into a sector or a triangle.

To get half point thicknesses, you need to set the number of subdivisions to 18.



Unfortunately, the 8:1 maximum zoom in Draw is too small to do quarter point lines directly, so you need to construct them double size and then “magnify” them by 0.5, or else use Artworks with a 4000% magnification. On the monthly disc is a selection of plain rectangular borders from ¼ point to 6 point thickness.

The only remaining problem is that Impression puts the borders around the outside of the frame so, with thick borders, you can’t use the “snap to frames” feature to get your alignment right when the frames have different borders, as you can see from the frame opposite.

Cain Hunt, Cambridge

Mouseballs – Logitech mice sometimes begin to slip when a glassy film of material builds up around the periphery of the rollers which contact the mouse ball. This can be as little as 0.5mm wide but is very tenacious. Using a piece of metal or wood to dislodge the material can easily damage the rollers. With a bit of patience it can be softened using isopropyl alcohol on a cotton bud. Lint free cloth is even better. This takes a few minutes of gentle rubbing to do the trick. One of the rollers is spring loaded and is a little more difficult. A clean cotton bud holding a little IPA can be used to rub around the mouse ball to remove the stickiness. If an Archive type mat is used, a gentle wash with warm water and detergent will delay the problem recurring. Everything has to be completely dry before reassembly.

Les May, Rochdale ♦

This frame has the same width as the text frame above but the 5 point border around it ruins the vertical alignment.

Puzzle Corner

Colin Singleton

Interest seems to be picking up, so I will stick with this format for a while. Contributions, particularly for Quickies, would be appreciated.

(13) Multiple Shifts

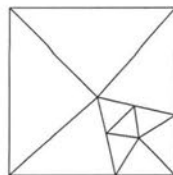
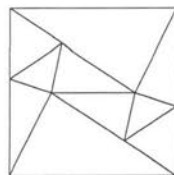
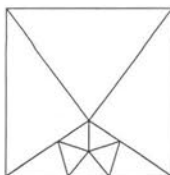
Several readers suggested variations on this puzzle. If leading zeros are permitted, solutions can be found for multiples greater than nine. The technique I outlined last month (among others) will work. The problem can also be extended to involve shifts of more than a single digit. Readers with long memories may recall that this was my number-crunching competition in Archive 4.3.

Cornelia Rösch also investigated numbers which are multiples of their reversals, and noted the near miss $12345679 \times 8 = 98765432$. She could have added $123456789 \times 8 = 987654312$. Indeed, if you multiply 123456789 by each of the

numbers 1–80, 33 of the products are pan-digital. There is scope here for considerable time-wasting, for man and machine. The prize goes to Richard Lyszkowski, of Bridge of Allan, Stirlingshire, one of a number of readers who listed all non-repetitive solutions without leading zeros.

(14) Very Acute

Several readers found solutions with ten triangles, but no-one matched my eight-triangle solution. The most popular solution was the left-hand one, below. The winner is Graham Jones of Durness, Sutherland, the only reader who found any other solution. His dissections are shown, centre and right.



(16, 17) Roots & Knockout

Several readers solved these non-prize puzzles. From now on, quickies will earn small prizes – provided there are enough entries.

(18) No Progress

Lists of $4 \times N$ numbers appear to be the only ones with unique minimum solutions, though I haven't managed to prove this. In the table below, the first three columns contain the number of numbers in the list, the minimum value of the largest number, and the number of such solutions. A specimen solution is given for each length of list.

(19) Waterfall?

Yes, the water level does fall. Overboard, the brick displaces its own volume of water. In the boat, it displaces its own weight of water – a larger volume.

(20) Till Death Us Do Part

Let Smith's chance of winning the duel be S . His chance of winning with his first shot is $1/3$. His chance of failing with that shot, and surviving Jones' first shot is $2/3 \times 1/2$. His chance of winning the duel must then be the same as it was at the start. Hence $S = 1/3 + 2/3 \times 1/2 \times S$. Hence $S = 1/2$, and the duel is an even match.

(21) Loony Post

If the stamp values are X and Y (which must have no common factor), then the number of impossible postage values is $1/2(X-1)(Y-1)$. The only values of X and Y which give exactly 38 impossible values are 2 and 77, so these are the Loony stamp values.

3	4	2	1	2	4														
4	5	1	1	2	4	5													
5	9	4	1	2	4	8	9												
6	11	7	1	2	4	5	10	11											
7	13	6	1	2	4	5	10	11	13										
8	14	1	1	2	4	5	10	11	13	14									
9	20	2	1	2	6	7	9	14	15	18	20								
10	24	2	1	2	5	7	11	16	18	19	23	24							
11	26	2	1	2	5	7	11	16	18	19	23	24	26						
12	30	1	1	3	4	8	9	11	20	22	23	27	28	30					
13	32	2	1	2	4	8	9	11	19	22	23	26	28	31	32				
14	36	2	1	2	4	8	9	13	21	23	26	27	30	32	35	36			
15	40	20	1	2	4	5	10	11	13	14	28	29	31	32	37	38	40		
16	41	1	1	2	4	5	10	11	13	14	28	29	31	32	37	38	40	41	

(22) Differences

This month's Prize Puzzle. Select four positive integers at random, e.g. 32 67 62 11. Now calculate the absolute differences between adjacent numbers, in this case 35 5 51 21 (the last of these is the difference between the last and first in the original list). Again – 30 46 30 14. And again – 16 16 16 16. And finally – 0 0 0 0. This example produces all zeros in just four operation cycles. Try a few more random selections – most produce zeros in four cycles, some six, rarely more. The problem is to find four numbers each less than one million which require the largest possible number of cycles to produce all zeros.

The second prize will be awarded to the best trio of solutions to the following Quickies (23–25).

(23) Similarities

Two similar triangles with integral sides have two side-lengths in common. Their third sides differ by 387. What are the lengths of the sides?

(24) Rhymes

Many English words pronounced “~shun” end in ~tion. How many can you find which are spelled ~shion? And how many English words rhyme with month?

(25) Pythagorean Fractions

We are all acquainted with the Pythagorean equation $X^2 + Y^2 = Z^2$, for which the simplest integer solution is $3^2 + 4^2 = 5^2$. But what is the simplest integer solution to $1/X^2 + 1/Y^2 = 1/Z^2$?

Comments and Solutions

Please send comments, contributions and solutions to me at 41 St Quentin Drive, Sheffield, S17 4PN. Solutions by **Friday 7th July**, please. ♦

Comment Column

BBC bits (where NOT to send them) – In a small ad in Archive 8.5, we mentioned an organisation called “Family Missions” in Shipley as being a suitable recipient of any spare BBC stuff. Unfortunately, it seems that this may NOT, in fact, be terribly suitable. They have disappeared to “somewhere down South”.

Please therefore *only* send BBC software and hardware to NCS marked “For Charity”.

Ed.

BJ200 + Turbo Driver problems? – (8.9 p50) Computer Concepts have produced a new version of the main disc with the ‘PrintDefns’ directory dated 21 Mar 1995. In it is a new ‘BJ200’ printer definition file (dated 07 Mar 1995) which is now OK. The accompanying letter says the disc ‘contains the latest beta release of the software and will probably become the next full release version’.

I haven’t investigated the full equivalences used but I do note that the mapping for characters above &FF is different from the Acorn ‘standard’ Epson printer mappings. I assume that they are correct for the Canon BJ200 when set up in the ‘Epson Italics Character Set’ mode. However, I have not tested this.

John Wallace, Crawley

CD hell – My college uses both IBM compatibles and Acorn computers. The library, which makes extensive use of CDs, has opted to be exclusively IBM. You borrow your CD and put it in a drive local to the computer.

The arrival of a new CD is a time of distress for the computing department. The director of computing and our technician (an IBM specialist) have been known to hide from the librarian. I try to look blank and to pretend I have no understanding of IBMs (it’s a bit worrying that this deceit is so readily believed). The trouble with the library’s CDs is that each one takes ages to install, and each one requires special machine configurations which conflict with

the use of other CDs. Some CDs seem to take weeks to get going.

Our technician, an IBM specialist who is rapidly becoming an Acorn enthusiast, was taken aback when I first set up the application accelerator software to export CDs on an Acorn system. It was so quick and easy. Run the AA server software, drag a CD onto it, and instantly any station running the application accelerator software can access it. For native Acorn CDs, that was all I had to do.

A student even brought in an Amiga cover CD. Could he get JPEG files from the CD on to a disc his Amiga could read? Easy – it took about five seconds to set up, and a few seconds later, the first graphic was over the network and there on the screen of a Risc PC.

If in college we costed the *support* for IBM compatibles and Acorn computers separately, I think it would be obvious that IBMs cost much more. Yet I *still* hear arguments about the relative costs of these systems, only considering the base cost of the machine.

Robert Christmas, Gosport

CD-ROM speeds – Fred Grieve’s interesting review of CD Fast (Archive 8.9 p76) raises a crucial point which I think may not have received enough attention, and that is, the relative speeds of the two sets of interfaces and drives which he used. The IDE system was 50–400% slower than the SCSI one, although both were double-speed drives. If any processor, printer or hard drive was four times the speed of another, the benchmarks would be very well publicised. But for someone who is contemplating a CD-ROM drive, how do I make sure that what I buy takes 0.58 secs, and not 2.22 secs, to open the root directory of the PDCD-1 CD? This seems to me to be a crucial area that needs some feedback from users, and the simple tests that Fred used could be an effective benchmark suite.

(If anyone has any information that they could pass on, please send it to Andrew Flowerdew, 1 Crane House, Golford Road, Cranbrook, Kent, TN17 3NP, our

CD-ROM Column Editor – or via the NCS office if you prefer. Thanks, Ed.)

Stuart Bell, Horsham

ClickBack – Last month, David Holden was, in his PD column, quite unrestrained in his praise for this Careware back-up utility. I write simply to say “hear, hear”! It is *brilliant*. Having bought a SCSI 105Mb SyQuest drive from NCS, about 160Mb of data compresses to 70Mb on the SyQuest for a full back-up in about 2 hours – the time taken being largely to compress the data. I simply leave it running when I don’t need the computer for a while. Differential back-ups scan the whole 160Mb for changes, and take a couple of minutes. At £10, it’s the bargain of the year, and all in a good cause.

Stuart Bell, Horsham

Drag & drop in ImageMaster – One of the niggles in all the reviews I have read about David Pilling’s ImageMaster concerned the program’s inability to load an image which was dropped onto its window.

If you try this in version 1.05, you will find that Mr. Pilling has once again listened carefully to criticism and has integrated this feature into his program!

Jochen Konietzko, Köln, Germany

EasyFont 3 – Further to the problem I reported in 8.9 p25 about using archived fonts with !EasyFont3, I have now received a reply from Mark Smith, the author of ArcFS.

He states: “ArcFS will not normally be able to compress font directories, at least not by very much.

However, the real overhead in large font directories is the amount of space occupied by large numbers of directories that only contain two or three files each, and this is why archiving fonts can save significant amounts of disc space. That said, ArcFS is not intended to archive font directories, and I wouldn’t recommend that you do it – in particular, you could find ArcFS using a lot of memory to store open font files if you are using a wide selection of fonts in a document. I don’t have !Easy Font, but I understand that version3 uses its own font archiving system,

which is dedicated to dealing with fonts and is therefore much better suited to the task.”

I have reviewed my archived fonts, and I find that the average saving is only around 15%. These remarks explain some errors that I have had in the past relating to memory, and I shall not be archiving fonts in the future. For the information of ArcFS users, the latest read/write version is 2.55 and the read-only version is 0.73; they contain a few bug fixes which relate particularly to the RiscPC.

Ted Lacey, Southampton

Floating point hardware – There is a certain amount of confusion surrounding the use of floating point hardware. One reader states that it is hard to choose between an ARM700+FPA running at 33MHz and an ARM710 running in excess of 40MHz. The only programs which would run faster with the FPA option would be those concerned primarily with number crunching. This would really mean home-written single tasking calculations – possibly fractal calculation programs. However, once you are using the multitasking desktop, almost all commercial RISC OS software will run faster with the FPA-less CPU running at the faster speed. Remember that even programs such as Draw and Basic V make no use of floating point operations. The only time you *might* do better in the desktop with floating point hardware is when using some CAD programs.

Brian Cowan, Wembley

Importing and exporting text –

Following Jim Nottingham’s series, which I found very helpful, I thought readers might like to hear about my experience. Briefly, I write (and edit) a house journal, and see it through its editorial and pre-production stages. These are:

1. Writing – I have Impression Publisher and MS Word 5.5 (an advanced non-Windows version) at my disposal, but for this particular job, I prefer EasiWriter as being more fluent and practical. Each of the 40-odd stories, ranging from 30 to 800 words, gets a separate EasiWriter file.
2. Approval – I present mss (hard copies) of the stories to my clients for approval, and later make any

amendments they ask for. The mss (written on an EasiWriter 'stationery' form) are vital; the early, and intermediate, versions serve as approval 'manuscript'. The definitive version is a guide for the typesetter/DTP operator. The header carries:

- RISC OS and DOS filenames to identify the story
- a provisional headline, written before the story, to keep my eye on the ball as well as to help identify the story for the non-computer-literate
- automatic dating to avoid confusion between versions. Before we refined the procedure, this confusion happened several times and resulted, embarrassingly, in unapproved copy being published.
- the folio number
- A footer contains a message asking recipients to confine themselves to matters of fact and to keep their well-meaning paws off the prose!

3. Delivery etc - Using the Selection-Save-Text procedure in EasiWriter, I make ASCII copies on my hard disc of the approved files, and copy them to a DOS format floppy which I deliver to my client with the definitive mss. At this stage, in theory, I have largely done my bit.

The Communication Dept import my text into Word for Windows for final checking and last-minute alterations. The (absolutely!) definitive versions are then handed, on a DOS format disc, to the Print & Design section, who put them in a Mac and import them into a Quark ExPress file (incidentally, just one file for the entire publication!). So all told, my files undergo four metamorphoses between the original form and the typesetting bureau: (RISC OS) EasiWriter-ASCII-(DOS) Word for Windows-(Macintosh) Quark ExPress-PostScript!

It works. The only noticeable, and minor, problem compared with earlier exercises when I used to start from MS Word 5.5 or IBM DisplayWrite 4, has been that the '£' sign, en-dash and em-dash (ASCII 151 and ASCII 152) translate incorrectly but, as Jim Nottingham has pointed out, such things are easy meat for search & replace.

Peter Robertson, Tewkesbury

Microwriter Information - The company once known as Microwriter have been through a number of changes. It brought out a wonderful machine called the Agenda which I reviewed in Archive (3.11 p48). This machine is a seven key, one hand, quick entry, portable wordprocessor which can be linked to any computer with an RS232 type serial port. That means that it can be used on anything from a BBC Micro up to a Risc PC. I know - I still do it. It took one hour to learn to use, and I can't type properly either. It is almost entirely the same code as used on the Microwriter.

Unfortunately the company went bust, but, as I was the writer of the software for making Acorns talk to Microwriter/Agendas, I still have it. If you would like the new Risc PC version, please send an SAE and blank formatted disc to me and I will provide my software. It only allows downloading from the Agenda/Microwriter to the Acorn, but if you want full communication and have an IBM PC or PCcard, full facility software is still available from the inventor of the QuinKey Chording Keyboard which is at the heart of the machines.

I only use the downloading facility myself. It generates raw ASCII which is good enough for anything. The inventor will charge a modest price, as he is doing it in his spare time to support Agenda users who have been, like him, badly let down by the company. If anyone has won the lottery recently and wants a new Agenda Mk3, talk to him - he has great plans. I can be contacted at 62 Rutland Road, West Bridgeford, Nottingham, NG2 5DG. The inventor is C. Rainey, Bellair Electronics, 4 Broadgate, Pilton, Barnstaple, North Devon, EX31 1QZ.

Simon Anthony, Nottingham

Music printing - With the aid of my A3000, I have become a 'hobby composer'! I have used the five different music programs as they appeared on the scene: Maestro, Notate, Rhapsody, PMS and Sibelius.

The Sibelius music program is marvellous. I like the radar scroller for locating a note anywhere in the score in seconds... the automatic calculation of the

'rest values' in the bar following note insertion and the professional look of the printout. I can *play* a single note anywhere anytime... a single bar... a single stave... the complete work... but I have *not* found how to check the sound of *two* staves played together. Is it possible, please? I would like to hear (say) the Soprano and Tenor tunes sung together, free from the Alto and Bass parts.

Notate is more elementary but it has two features I like. (1) It has a 'mixer', allowing one or more parts to be played together (see above), each part with its own 'sliding' volume control on the screen. (2) It has a note input through a screen keyboard, in real or step time, as well as 'dragging' notes onto the stave. I use it for working out simple themes before transferring to either PMS (Philip's Music Scribe by Philip Hazel) or Sibelius for printing with the trickier parts!

PMS allows notes and expression marks etc to be *typed in* using *text* in an Edit window. Sibelius, by contrast, uses the function keys for note length and dragging to pitch on the stave with the mouse. Sibelius thinks for you... but I think that PMS allows more control (if you are prepared to take the time).

I use two important features from the PMS program... (1) I can arrange for two staves to be printed *on top* of one another! This allows me to reduce a four-staved choir piece into a two-staved piano accompaniment. (2) If I type the @ symbol, the rest of the line becomes a 'comment' and has no effect on the notation. So, by typing or deleting the @ in front of the <linespacing> command, I can change from *four* to *two* staves and back at the drop of a hat! (*Or even at the drop of an 'at'?* Sorry! Ed.)

JOHN VEG'S TUNE ?
on two staves
with the '@' deleted,

JOHN VEG'S TUNE ?
on four staves
With the '@' included, goes to default barspacing.

I save a lot of time by using a 'Standard Layout' for all the 'headings' and the information needed for key, time, line-spacing, systems-spacing, brackets, etc, and the information needed for each stave. The 'Standard Layout' is copied for each new piece. Included in my standard layout are some lines starting with @ for all unusual or alternative 'headings'. Then I can call them up by just deleting the @.

Then I can get into the 'music...' with a minimum of typing!

PMS Specimen program

(The Standard Layout has been copied... **Bold type** has been used to pick out the text needed only for entering the notes.)

heading "John Veg's Tune ?"

heading "in four (two) parts"

breakbarlines

notespacing *1.1 (magnifies the note spacing by 1.1).

key G (the key with one sharp).

time 3/4 (three crochets in a bar).

@ stavespacing 1/0 2/48 3/0 4/48 (... stave spacing)

(The number *after* the slash gives the distance to the next stave. So '1/0' has '0'-space, i.e. zero space, between stave 1 and stave 2. So stave *two* will be printed on top of stave *one*. '3/0' prints stave *four* on the top of stave *three*.)

(The '@' symbol at the start of the line turns it into a 'comment'. So the default spacing for *four* staves will operate.)

[stave 1]

[treble 1 stems up]

g-ia;-b;-c;-d;-e- |

('-' key for a quaver, '-' key for an octave up).

G'r|

(upper case for a minim)

[endstave]

[stave 2]

[treble 1 stems down]

g g b-a- |

(lower case for two crochets... followed by two quavers.)

Br |

and so the support is only as good as the authors have time for. This isn't acceptable for companies.

I believe that this could be another niche market for Acorn; every Analogue (and quite a few Digital) Engineer needs to use Spice – for me, it was at least ten hours every day. The options for running the package at the moment are either a PC or a Unix Workstation. The PC option could cost £2,000 to £3,000, whilst most of the Unix options start at about £20,000; how about someone pitching a system in the middle? Acorn! Any software companies care to take up the challenge?

Nick Chalk, Sheffield

Promoting Acorn 2 – I've just received the latest edition of Creative Technology and in it is an excellent editorial and a review of an Acorn system for use in design work. At last, some positive press for Acorn, albeit in a heavily Mac-dominated area. More power to Acorn's elbow!

Neil Fazakerley, London W2.

Rounding errors in balance sheets

– In Archive 8.4p33, Gerald Fitton identified a problem associated with rounding errors in a spreadsheet, which he presented in the form of a puzzle attributed to me. My version was in fact rather different, as explained in my column in Archive 8.5p30. The solution described here solves neither of these puzzles, so let's start again...

Balance sheets – The trading account and the balance sheet are vital financial documents in any business, and are scrutinised avidly by the auditors. The trading account comprises a list of turnover figures for a specified period of time. The balance sheet lists balances as at a specified date. In each, the figures are pigeon-holed into a list of nominal accounts, each normally identified by a numeric code and an associated description to identify its accounting significance.

Accountants usually list the figures in two columns, debits and credits, side by side. The grand totals of the two columns should be the same. To a systems designer (or a mathematician) it is more logical to arrange the figures, each with the correct sign, in a single list. The grand total should be zero.

When designing accounting software, I have always adopted the latter technique internally. The software can, nevertheless, be written to show the figures in debit and credit columns, if required – this is essentially a matter of presentation.

The rounding problem – Each figure on the accounts file is a sum of money, held precisely to the penny. However, since the figures are hundreds, thousands, or even millions of pounds, the odd 37p is insignificant and the accounts are easier to comprehend if the figures are printed as round £s (or £000s for a large company). Now, consider a simple example of three figures and their total – £31.97 + 87.80 + 42.56 = £162.33. Round each figure to the nearest pound. £32 + 88 + 43 = £162. Help!! It doesn't add up. The accountant will launch an inquisition. How can the computer adjust(!) the figures so that they look right, and *are* right within a set of rules simple enough for an accountant to understand? (Do accountants read Archive? If so, sorry!)

'Flexible rounding' is a term I have just invented, though I invented the process several years ago to solve this problem, and have recently re-discovered my notes. Flexi-rounded figures are each rounded to an adjacent integer (or thousand, etc), but not necessarily the nearer of the two. Thus £42.56 may be rounded for printing to £42 or £43, as we wish, but to no other figure. A figure which, by chance, is already an integer must not be changed. The maximum rounding error is thus 99p, rather than the usual 50p, though, in practice, errors approaching £1 will be rare. We can now present the above addition in flexi-rounded form, £32 + 88 + 42 = £162, which is true!

```
DIM Exact(Num%), Round%(Num%)
Adjust = 0.5
FOR I% = 1 TO Num%
  Adjust = Adjust + Exact(I%)
  Round%(I%) = INT(Adjust)
  Adjust = Adjust - Round%(I%)
NEXT I%
```

The above Basic code generates a flexi-rounded version of a list of exact figures, each of which may be positive or negative. Programmers should note that, for this purpose, when the INT function is applied to a negative number it must round *down*,

towards $-\infty$. Acorn Basic, in common with many other dialects, rounds INT towards zero, so this coding must be modified to give the correct answers. Equivalent coding can be devised for any other language.

Subtotals – If our balance sheet comprised only a list of values and a grand total, there would be little problem, and this routine might be viewed as the proverbial sledgehammer to crack a nut. In practice, a typical set of accounts includes numerous nested subtotals corresponding to accounting categories at various levels. The strength of the flexi-rounding technique lies in its treatment of subtotals.

Having rounded the list of exact values using the above procedure, each subtotal should be calculated by totalling the *rounded* values, not by rounding the total of the exact values. Provided that each subtotal represents a selection of *consecutive* values in the list, it will be found that any total obtained in this way is always a flexi-rounded version of the exact total, i.e. the error in the total never exceeds 99p. By comparison, the error in a total obtained by adding conventionally-rounded values is theoretically unlimited. The rounded values, as printed, always total correctly to the printed subtotals, and these in turn total correctly to the next higher level subtotal, right up to the grand total, which will, in fact, be conventionally rounded to the nearest integer.

If you can persuade your accountant to accept flexi-rounding as a slightly liberal alternative to nearest-rounding, you, and he, may never again need to explain rounding errors to those who seem unable to understand this simple problem!

Colin Singleton, Sheffield

RTF/savers and loaders from CC –

I was involved in some of the beta testing on these and I was very impressed with the ease with which I could exchange data with my colleagues, most of whom use MS Word or WordPerfect. Now that I have my PC486 card in my Risc PC at home, I've installed Word for Windows on my DOS partition and I can convert between different document formats much more easily. I don't need to ask my colleagues to give me RTF files but instead I export them from Word myself.

I'm still disappointed with Fireworkz Pro though. The RTF features of Fireworkz seem to be full of bugs and it's almost impossible to exchange data between Impression and Fireworkz using RTF. Sometimes it is possible to filter the RTF files through Word and get some sensible transfer between the two Acorn products.

As Gerald Fitton often points out, it's the ability to port your data easily which decides the best software in the long term. In this respect I think that Colton ought to improve their Fireworkz package.

Mike Clark, Cambridge

SCSI-2 query – Regarding Chris Walker's query, (Archive 8.9 p10) as I understand it, there are several permutations of "Fast" and "Wide" in the SCSI-2 standard...

Basic: 8 bit @ 5Mbytes/s

Fast: 8 bit @ 10Mb/s

Wide: 16 bit @ 10Mb/s or 32 bit @ 20Mb/s

Fast & Wide: 16 bit @ 20Mb/s or 32 bit @ 40Mb/s

From a review in the June issue of Acorn User, I believe that the Cumana SCSI-2 card is 8 bit, Fast SCSI. However, to achieve anything like this performance, you need a drive to match the interface. Usually, it is only large, expensive drives that meet the Fast or Wide standards (e.g. IBM or DEC). Acorn User quotes some transfer-rate measurements for the Cumana card and an IBM 1Gb SCSI-2 drive...

With SCSI-1 i/f : ~1.0Mb/s

With SCSI-2 i/f : ~3.4Mb/s

Nick Chalk, Sheffield

VerbMaster-French review (8.9 p73)

– Thanks very much for publishing the review of VerbMaster-French. I felt it was, generally, a fair and complimentary appraisal of the program, but may I be allowed to answer a few points?

1. The bug in the 'cyclic-add' feature has been fixed in the latest version (1.01), as have the typing errors in the VerbFile supplied – sorry!

2. Genders. I only used the masculine version of nouns (the *il* form) due to lack of space in the main

window, and because VerbMaster aims to help you learn the conjugations of verbs; as the forms for *il/elle/on* are generally the same, there seemed little point in wasting space on separate entries. Furthermore, the necessary agreements for verbs conjugated with *être* are indicated in the main display window.

3. Testing of verbs. The decision to ask for verbs in the form: *'Please enter the vous form of the imperfect tense of the verb aller.'* was deliberate. If it were to ask for the meaning of *'you (pl) were going'* it would be necessary for me to program the conjugation of *English* verbs (which is more difficult than French!) and for the user to enter English translations in full for new verbs, which would be tiresome. The purpose of VerbMaster is **not** to teach prose translation, but to help learning verb forms; it is a grammatical approach, but I believe that this is the only way to learn foreign verbs, and, as your reviewer concludes, VerbMaster does do this comprehensively!

4. Sinners of the world unite! Mr Campbell quoted the phrase: *Let him who is without sin ...!* and I am sure he is aware that there are few Shareware writers who write perfect, bug-free programs – that's why there are professionals! I would welcome enquiries from readers involved in teaching/learning modern languages to try the program and suggest advancements and improvements. The next version will have password protection of certain features, the ability to turn tenses off and the conjugations of the subjunctive mood (the Add Tense feature, which Graham didn't mention, allows you to enter it yourself, if you can't wait!). Upgrades will be free to registered users and will be sent to APDL. It has to be said that I am not charging the earth for the program (£7.50), and I hope users will find it good value for money.

Nigel Caplan, 33 Alwoodley Lane, Leeds, LS17 7PU.

WordPerfect? – I thought I really ought to weigh in on the WordPerfect / Publisher argument. Christopher Wightwick (8.9 p29) might like to know that the Journal of Physiology, the top academic journal in its field, is prepared right up to CRC (Camera Ready Copy) using Impression Publisher

on Acorns. We handle the accents not only for French and German, but also Spanish, Polish, Danish, Finnish etc, etc – frequently quite a variety of languages in a single document. Greek and Russian are no problem, nor even Hindi.

It's all WYSIWYG on screen and can be typed straight from the keyboard, with a minimum of keystrokes, and not arcane ones at that. We can remember – and touch type – the ones we use a lot. All of them fit on an A4 chart, in large type.

Greek, Russian, Hindi, etc, all use the correct typewriter keyboard layout used in their home countries, making touch typing possible. Just double-click on the Taj Mahal and away you go; Houses of Parliament and you're back. For an odd Greek character in the middle of English text – common in scientific material – you don't even need the Parthenon: hold <alt> down and type the character.

Not that we type much – mostly just copy-editing corrections and alterations. We accept authors' papers on disc – almost any disc, any word processor. We prefer 1.44Mb Mac discs, which we can read on the Acorns, rather than the old variable-speed type that we have to convert via our dusty Mac. We ask authors not to send 2.88Mb DOS discs; anyone who uses them can produce a 1.44Mb disc for us. Obviously, we would be very interested if anyone could produce a 2.88Mb drive for the Acorns. About 94% of submissions are read straight into the Acorns, and it's over 99% if you include those that come via the Mac. This is statistically significant: The Journal of Physiology has an average of 45 academic papers a month, totalling 600 A4 pages, from all over the world. We do two other, smaller journals as well.

We often have to retype tables and the more complex mathematical material, but Publisher makes a good job of them. I can tell how much hassle the authors have had, often using WordPerfect, by the contents of the files they submit.

Our import filter automatically recognizes and converts a total of 30 different file types. Some of these cover several versions of a word processor, or even several different word processors with similar file formats. In other cases, we need different

modules for different versions of the same package. WordPerfect 5.1 and WordPerfect 6.0 share a second stage, but need different front ends, for example. The filter also has switchable output stages according to which of our journals the paper belongs to, so that it can format the output appropriately, and use the right styles.

Finally – ‘amusing deformations’ – we can’t resist calling (guess what) Windows for Playgroups whenever we watch people in a neighbouring office ‘using’ it, and compare it with what we can do in here, with much less fuss.

Clive Semmens, Cambridge

Word Processing (8.9p29) – I don’t know about Fireworkz, but the error “*Archive amgazine*” can be corrected in Publisher very simply by using <ctrl-shift-Q> to switch the offending letters. (*Can you do that in Word Prefect (sic)? Ed.*) Impression does have user-definable F-keys, drag-and-drop and paragraph indent (Nos 6, 9 and 10 on Christopher’s wish list), and it surely has a longer list of ‘Load from’ formats than any other package! He should not judge “Acorn WPs” by just one example. I back John Molyneux. I too have friends who use PC word processors (though I do not do so myself), and they invariably breathe a sigh of relief when they can use Publisher on my machine!

Colin Singleton, Sheffield ♦

Help!!!!

“Bad compression field” – Frequently (i.e. more often than not), when printing long documents (using Impression II and a Canon LBP8 LaserDirect version 2.61), I get an error message along the lines of “Bad compression field” and a page that is only partially printed. After this, the printing (almost!?) always hangs, the rest of the computer being fine. This seems to need a hard reset to cure, since neither switching the printer off and on, nor quitting and restarting the printer driver, cures the problem. Is there a less painful solution?

Torben Steeg, Manchester

I’m using Risc PC, LBP8 and 2.63 and I don’t have Torben’s problem but, if I get a paper jam, any future attempts at printing produce zero response at the printer. I have to do a complete swich off. Has anyone else got this problem? Better still, has anyone got a solution?!
Ed.

Bridge program – Does anyone know of a program, or has anyone written one, running under RISC OS, that will calculate and print out the scores for a Duplicate Bridge competition using either a Howell, Mitchell or Swiss movement. (Bridge players will know what I mean.)

(I’ve no idea if this is the same thing, but look at John Wallace’s offer on page 21. Ed.)

Graham Woolf, 4 Drake Close, Poulner, Ringwood, Hants, BH24 1UG. (01425-471060)

Foreign Characters (8.9 p27). I assume this technique will only generate those accented characters which are in the Latin1 character set. One FFAQ [Fairly ...], especially among musicians, is “How do I print the name Dvořák?” (Without cheating!) (*It’s a drawfile embedded in the text, in case you were wondering. Ed.*) The character r-caron is defined in the Latin2 character set and the outlines for Latin2 (and Latin3 Latin4, Greek and Cyrillic) are hidden away somewhere in the ROM Fonts, Trinity and Homerton, which come with RISC OS 3. Unfortunately, it seems to be impossible for Impression (or anything else, except Edit) to get at them. Can someone who knows how perhaps extract them from their hiding place and store them under modified Font Names, so that we can all use them on the rare occasions they are needed, alongside the Latin1 characters.

(Perhaps Clive Semmens, with all his experience – see Comment Column, page 24 – would be able to help. How about an article on how you do it, Clive? Ed.)

Colin Singleton, Sheffield

Printing Labels – Can anyone recommend a label printing program? I used Quest very satisfactorily for some years but since changing from an Epson dot-matrix to a Canon BJ200, I cannot get the labels to print correctly. Perhaps someone could write an article on label production and printing.

Several of my friends have PCs and have very good programs for making and printing the draw for sports events. Is there anything similar available for Acorn?

Roger Jackman, Slough

Ray Tracers – I wonder if there are any competent Illusionist/ray tracer users out there in the Archive readership who would be willing to lend assistance to a new PD/Shareware program that I am currently working on! Work would basically involve drawing and rendering different room scenes. I can't offer a huge amount for your work,

but I am willing to share any shareware fees with you! If you're interested, please contact me for more details.

James Pullan, Neural Net Design, 23 Frayne Rd, Ashton Gate, Bristol BS3 1RU.

RS Components' CD-ROM catalogue

I mentioned some time ago that I had a surplus RS Components' CD-ROM catalogue which I would pass on to anybody who wanted it. In connection with this, Steve Williams rang to say that he also has a few spare, so more are available if anybody else is interested.

Keith Hodge, HES – see Factfile.

Statistical program? – Does anyone know of a statistical package with a multiple correlation program in it? Commercial or PD – don't mind.

Tony Cowley, Ipswich

Small Ads

(Small ads for Acorn 32-bit computers (i.e. not BBC's) and related products are free for subscribers but we reserve the right to publish all, part or none of the material you send, as we think fit. i.e. some people don't know what 'small' means and there are certain things, as you can imagine, that we would not be prepared to advertise as a matter of principle. Sending small ads (especially long ones!) on disc is helpful but not essential. Ed)

1-2Mb RAM upgrade for A3000. £25. Phone Steve on 01603-507606.

500Mb HD with IDE controller, brackets etc for A300/400 series computers £175. RISC OS 3 chips, carrier board, manuals and discs for 300 series and early 400s £75. Phone 01992-462072.

A3000, 80Mb HD, RISC OS 3.11, 1.44Mb FDD, 4Mb RAM, Phillips colour monitor with stereo sound, Impression Publisher. Also extra software and games. Phone 01508-471204.

A3000, 2Mb (Morley expandable), RISC OS 3.1, Oak 30Mb SCSI external drive & i/f, twin 720Kb

floppy drives & external i/f, and JP150 inkjet printer plus software. £375 o.n.o. Phone Steve on 01803-873073.

A3000, 4Mb, 45Mb Oak HD, 45Mb Syquest removable HD + 3*45Mb cartridges, Oak SCSI external interface, Acorn RGB monitor, Panasonic KXP1124 24-pin printer + support plinths for monitor and printer, assorted software, manuals and books, cannot split, all v.g.c. £950 o.v.n.o. Phone Neil Berry (daytime) on 0116-2525060.

A3000 2Mb, 120Mb HD, RISC OS 3.11, SCSI port, sound sampler, 'Ultimate' expansion, Midi port, serial u/g, TV modulator, dual joystick port, all manuals, many games, app's and loads of PD, £400 o.n.o. Phone Neil on 01522-685295.

A310, 4Mb, ARM3, RISC OS 3.1, colour monitor, FP co-processor, 240Mb IDE drive, joystick, PCEmulator £500 o.n.o. Impression Publisher £60, Schema 1 £25, Schema 2 £45, S-Base II Developer £50, Acorn-C £30, Artworks £55, Naughty Stories £20, PipeDream3 £30, ProText £30, Desktop Office £20, ABC Basic

compiler £25, Graphbox Pro £40, Plot £30, Investigator3 £20, Disc Rescue £15, Easiwriter £20. All inc. manuals. Phone 0114-2483534 after 6.30pm.

A400 Spares new or as new. RISC OS 3.1 £50, mouse £10, 2Mb memory £60, DAC fan quietener £10, Oak SCSI card (1.35) £35, Arxe HD disc podule £offers, Basic/User manuals £5 each, RISC OS 2 PRM £20, A5000/A540 Technical RM £30 each. Also DC600A tapes, Epson 2500 ribbons, HP LJIII Accessories. Phone 0181-751-2120.

A410/I, 4Mb RAM, 33MHz ARM3, 50Mb HD (2 off), Newlook desktop, I/O podule, Midi, Sound sampler, keyboard extension cable and postage £500 o.n.o. Phone Mark after 6pm on 01905-754277.

A5000, 4Mb RAM, 120 Mb HD, RISC OS 3.1, Acorn Multisync, 2yrs old, only light home use. £800 o.n.o. Enter the Realm £7, Archive mousemat £1.50 (!), back issue magazine coverdiscs (1991 onwards, Archimedes World, Acorn User and Acorn Computing) £1 each – write with your wants. Contact Jon Aylwin, 4 St. Margarets Close, Hemyock, Devon, EX15 3XJ.

A5000, 4Mb RAM, 40Mb HD, RISC OS 3.1 base unit, with PCEmulator and DR DOS 5.0. £550. ColourCard Gold £130. Eizo 9060 14" Multiscan monitor £150. All the above £750. Panasonic KXP1124 printer £40. Fan quietener for A5000 £10. Pace Microlin fx Pocket Fax Modem £80. All items with manuals and in original packing. Ace ProDriver for HP £10. Phone Pete on 01663-733027.

A5000 LC, RISC OS 3.11, 4Mb RAM, two 40Mb HD, monitor, software, discs, magazines and other goodies, £900. Phone Pete on 01276-28433.

A5000, 4Mb RAM, 60Mb HD, PCEmulator and other software (no monitor) £550 o.n.o. Phone 0141-638-4328.

A540, 8Mb RAM, RISC OS 3.10, ColourCard Gold, Taxan 795, Laser Direct Hires 4, £1,000. Phone 0161-643-3736.

A540, 8Mb RAM, RISC OS 3.10, 120Mb SCSI HD, Acorn SCSI board, Eizo 9060S multisync

monitor £790. Software includes Easiwriter, PipeDream 4 and Interdictor, Cumana 5¼" floppy plus interface £25. Phone 01342-714905.

A540 – 8Mb RAM, 120Mb SCSI HD, RISC OS 3.11, Beebug 1.6Mb drive plus 800Kb second drive, tower case and Acorn case, £850. Taxan 775 multisync monitor £100. Atomwide Ether3 interface +Acorn Access and/or AUN ROM £100. Spectra colour 200 dpi scanner £250. Serial Port dual serial interface £75. EMR 8 bit sampler podule £35. Phone Mike on 01256-54103.

Aleph One 486SLC PC Podule, 50MHz 4Mb RAM !PC Software v1.59, Windows drivers, DR DOS and manual £300. Phone 01342-714905.

CC/Wild Vision Eagle M2 Multimedia Card, digitiser, Replay movies, audio sampler and Midi controller with Scanlight Plus and AudioWorks software, as new, £250. Contact Jim Nottingham, 16 Westfield Close, Pocklington, York, YO4 2EY.

First Impression tutorial guide and discs £10. Risc User Magazine Vols 1-7 complete in binders – offers? Micro User Volume 1 (1983) complete in binder – offers? Phone 01746-767068.

Games Pack – Loads of games including Elite, James Pond, Pandoras Box, Nevryon, Battle Chess, Repton3, Break147 & Superpool, Mad Professor Mariarti, E Type, David Pilling Chess, Fun School 2 and much more. £60 for the lot. Phone 0114-248-3534 after 6.30pm.

Magazine Indexes, Arcscan format. Model Engineer 1964 to 1994, Model Engineers Workshop to 1994, Engineering in Miniature 1979 to 1994, Dabs Press Book indexes, 1st Steps, Assembly Language, Basic V, C, Operating System £5 per disc including postage. B. Cocksedge, Ferndell, Kings Drive, Midhurst, West Sussex, GU29 0BJ.

PC486 Card, 4Mb later version with fast PALS. Latest Windows drivers, latest version of fast software. £300 or o.n.o. Phone Dave on 01397-704361.

Pocket Book/Series 3/3a spares, 512Kb RAM disc & new battery £90 o.n.o., 256Kb Flash disc £50 o.n.o., 128Kb Flash disc £30 o.n.o.,

Small Ads

Psion games disc one (7 games) for the above machines £20. Phone Mark after 6pm on 01905-754277.

Pocket Book/Series 3/3a Technical documentation – 3 large A4 manuals that cover the o/s and file formats. Definitions use 'C' notation, comes complete with PC 'C' libraries and a description of Psion's OO libraries. Machine code calls from OPL take advantage of o/s kernel routines. £60. Phone Mark after 6pm on 01905-754277.

RISC OS 2 PRMs with index cover, Basic User Guide, Archimedes Assembly Language (Dabs), Archimedes Operating System (Dabs), C (Dabs) all with support discs. Arcscan II, DT-Talk, I-APL with manual and tutorial. Phone Mick on 0114-274-7649.

RISC OS 3 Style Guide with Newlook disc new & unused £6. Phone Mark after 6pm on 01905-754277.

Risc PC ACB45, 9Mb, 17" monitor, PC card(!), SCSI CD-ROM, hardly used, Impression Publisher, Artworks CD + much more, £1975. Phone 01268-775356.

Wanted for Special Needs School, a set of RISC OS 3.1 ROMs. Phone Brian Cocksedge on 01428-684693.

Charity Sales

No charity bits this month as they are all going into the Charity Bring and Buy which NCS is sponsoring at Acorn World '95. If you have things to contribute, please send them direct to NCS.

Charity Sale – A Huge Success !!

We ran a Charity Bring & Buy at the **Acorn User Show** in Harrogate and raised over **£1,300** (possibly £1,700 – see below) for the Henshaw's School for the Blind, Harrogate.

Many, many thanks to all those who helped by donating stuff and to all those who worked so hard at the show. (I don't even know the names of all the helpers but thanks for your efforts!). Extra special thanks go to David Holden who was there both days and organised the whole thing. Well done David!

We are going to do the same thing at Acorn World 95 – but even better. Please send us your unused software and hardware now – BBC or RISC OS.

~~~~~  
We were given an A310, RISC OS 3.1, ARM3, 4Mb with 1.6Mb floppy which we reckon is worth £400 of anyone's money – especially for charity. We only got it late on the Sunday and didn't find a buyer. Any offers? If you want it with a hard drive as well, DH will put one in at cost – a bargain!!!! ♦

## Club News

**Christian Acorn Users Group** – As mentioned last month, the CAUG has set up a PD library which is being run by Andrew Bower. The group also has a World Wide Web page set up by Andrew Hilton, aiming to explain the purpose of CAUG, provide contact information and, in future, possibly provide a source of PD clipart and programs.

The page can be found at "http://www.comlab.ox.ac.uk/~ajh/caug.html" and Adrian Hilton can be e-mailed at "adrian.hilton@comlab.ox.ac.uk".

**The Suffolk Acorn Risc Club** meets at 7pm on the second Thursday of each month in Ipswich Central Library Meeting Room (use the side entrance in Old Foundry Road). Forthcoming events include: **Online Media and the Cambridge Interactive TV Trial** – Thursday 13th July, 7pm – A talk by Chris Pitts who recently left BT Research Labs to work for Online Media

For more details, please contact: Paul Skirrow (chairman) on 01473-728943 or fax 01473-270643 or email: PSkirrow@arcade.demon.co.uk. ♦

## David Holden

Shareware for the Archimedes is becoming much more common and, thankfully, standards are rising. However, I am often dismayed by the unprofessional approach of some authors.

For many years, I have tried to get Shareware firmly established as a viable means of distribution for Archimedes software. This is not easy. I am often told that 'Shareware doesn't seem to work for Acorn computers' or 'no-one sends registration fees for my programs'. The people who make these comments are implying that the blame lies with those using their programs. They appear to have forgotten the first rule of selling *any* product. **The customer is always right.** This may not be literally true, but you can't tell a prospective customer they are wrong and still hope to make a sale. You might think this has little or nothing to do with collecting registration fees for Shareware, but it really is the key, and any Shareware author who forgets it, is doomed to repeat those two phrases and blame everyone but themselves for their failure.

I shall try to explain some of the lessons that I have learned (often the hard way) in the hope that prospective Shareware authors will benefit from my experience. If you want to know what my credentials for writing this are, then all I can say is that I'm *not* one of the people who think that Shareware doesn't work. If I can make it work, I must be doing *something* right.

Next month, I will cover the physical aspects, inducements to register, crippling, etc, but I will begin by considering the ideology of Shareware. It is *not* just a matter of writing a program and asking for money. The 'state of mind' of the author is probably more important than anything else. If you can't see how significant this is, I doubt if you will have any success and, perhaps even more importantly, you will probably not enjoy the experience.

Some of what I am about to write may offend. I don't set out with that intention but it is a possibility. If you do disagree with something I say, I emphasise that these are my own opinions and not necessarily

those of the Editor, so please write to me personally to take me to task, not to the magazine.

## What is Shareware?

We all know what Shareware is, don't we? I'm sure that if you are actually writing programs, you must understand it. However, seeing, as I do, dozens of Shareware programs sent to APDL, I have become aware that, although most authors understand the concept in *theory*, they haven't really thought through the implications and how it must affect the way they write programs and, more importantly, the type of programs they write.

Most of these people seem to regard Shareware as any program which is freely distributed and for which they ask users to send them a registration fee. Anyone who has this attitude is doomed to failure. That is *not* what Shareware actually is. **Shareware is commercial software.** There is no difference between Shareware and the programs you buy in a computer shop or via mail order. It is not 'cheap software'. It normally *is* cheaper, but that's because the overheads are lower, not because less effort has gone into producing it or because it is inferior.

## A Shareware program is a product

If you are thinking of writing a Shareware program, or if you have written one, or if you have written one and not been very successful, please read this sub-heading and think very carefully about it. Shareware is *not* a 'type' of software, it is a means of marketing and distributing *commercial* software.

Consider the following statement: *A program that would not be a success if sold by other means will probably fail as Shareware.*

Let me relate this to the section heading. Many Shareware authors simply take a program that they have written, add a bit to the !Help file asking for money, and think that people will send it to them. When no money arrives, they join the "Shareware doesn't work" brigade. As a Shareware author you are *selling a product*. In order to sell something, certain criteria need to be met. There must be a demand, and your product must meet that demand

at a competitive price. There is no point in writing the most wonderful program in the world if no-one has a use for it. There is no point in writing a program that does what lots of people want, if what it does is something they are not prepared to pay for. These are self-evident, but how many programmers stop to reflect upon them before they start?

When a company considers a new product, they undertake 'market testing'. This involves trying to find out what potential customers want, how much they are prepared to pay for it and how many they would be likely to sell. If the survey indicates that they couldn't sell enough items of the required type at a price that would give them a satisfactory profit margin, the product is never made.

A product without a market cannot succeed. I have to confess that many of my own programs didn't start with a carefully considered attempt to fill a gap in the market. Normally, they were something that I had begun for my own use and which I then thought might be useful to others. However, the Archimedes program that I have written with more registered users than any other *did* start in just that way. I wrote Architype because people kept asking me if there was a typing tutor available.

My latest Shareware program, a link for the Amstrad NC 100, was also written because people asked for it. It took a long time to write, not because it was particularly difficult (although there were a few unexpected problems) but because I found it rather boring and didn't really want to do it, so I kept putting it off. But that's the way it often is with Shareware; it's not *meant* to be enjoyable, it's *work*.

### Writing Shareware is work!

Writing Shareware is paid employment. If you are lucky, you will be in the fortunate position of doing something you enjoy and having hundreds of employers, but never lose sight of the fact that it is work and that the people who use your programs are paying. It's up to you to keep them happy, and if that means including features you don't think necessary, or developing it in ways that you never intended, remember 'he who pays the piper...'

The sensible Shareware author quickly realises that this feedback is one his most valuable assets. Large corporations spend thousands (millions?) of pounds

on market research, trying to find out what their customers want. The practical Shareware author simply asks his users, encourages them to talk and, more importantly, listens to what they tell him. Quite often they will make suggestions that you would never have thought of. They will also complain and find bugs. Always listen. Even if you don't like what you're told, take notice. Sometimes, people will write a letter telling you why they haven't registered. This can be more valuable to the shrewd author than one from a satisfied user telling you how wonderful your program is.

I once had a five page letter from someone telling me everything he didn't like about a program and why he wasn't going to register. I agreed with some things he said, there were good reasons why others were not practical, and a few had already been implemented in a later version than the one he had. I modified the program to include some of his suggestions and wrote back with a copy. He immediately sent the registration fee, gave copies to some of his friends, and I later had some more registrations. If I had reacted unfavourably to his criticisms, I would have lost not only those registrations but perhaps others in the future.

If possible, make your phone number available. Users with difficulties (or suggestions) often prefer to phone. Frequently, a problem that would require several exchanges of letters can be sorted out with a bit of 'hands on' work over the phone. Reply to correspondence. Nothing annoys a user more than being ignored. If they haven't paid, it's almost certain to put them off registering. If they have paid, they have a right to have their queries answered. Allow a margin for this in your Registration Fee – it's part of the service and, as such, is part of your business overhead and must be included in your costs.

### Failure to register

There are many reasons why people don't register, and no sensible person would claim to have the answer. There are also many methods of encouraging registration which, although they might appear superficially attractive, are counter-productive. I shall describe some of these next month and propose some possible solutions but, in



keeping with the general tone of this month's section, I shall try to suggest ways in which the author should try to approach the problem.

The first thing that you must learn is *there is absolutely nothing you can do to make someone register*. Unenlightened companies spend fortunes on software protection, and most of it is wasted. As a Shareware author, you must learn to distance yourself from this paranoia. Someone who is using your software without registering has *not* robbed you of your fee. Legally and morally, that may be the case, but in reality it just isn't so. You must resign yourself to this fact and realise that such a person would never pay the registration fee whatever you do. If you cripple the program, or time limit it, or put in banner screens that pop up every minute or so and cause real annoyance, he'll use something else instead. How will that help you? You might *feel* better because he's not getting the use of your program for nothing, but it won't put an extra penny in your pocket.

Remember, you are in this for the money, so don't cut off your nose to spite your face. The greatest asset a Shareware author can have is a satisfied customer. He will tell others about your program, even give them a copy of the unregistered version and, in that way, you will get more registrations. All this promotion won't cost you a penny. But the second greatest asset is a user who *hasn't* registered, and for exactly the same reasons. He, too, may give copies to his friends, and they might be more honest. It is also possible that, at some future date, he might register. It is not unusual for someone to use a Shareware program for months, even years, and then decide they need to use it more intensively, or they want an additional feature that registration brings, or they suddenly have some spare money, or simply that their conscience pricks them, and they decide to register. A user who hasn't registered is still a *potential* customer but someone who has discarded your program in favour of something else, is a lost opportunity!

## Copy protection and Shareware

This might seem a silly heading since it is obvious that, by its nature, you want to encourage the widest possible distribution of a Shareware program, and so

copy protection is impossible. However, to conclude this section about the mental approach you need, I want to emphasise its difference from that adopted by the conventional software industry. Anyone who believes that copy protection of software is sensible, is ideologically unsuited to the Shareware principle.

The Shareware author depends upon two things. Firstly, you need a belief in your own abilities. Remember, you are going to *give* your work away. You must be confident that it is worthwhile and that others will recognise its worth. Secondly, you must believe in others. You must have confidence in them, and trust that they will pay. The important word here is *trust*. You need to realise that they are people just like you! This means they are honest, will recognise the validity of your claim on their money, and will pay what is owed. You don't have to force them. After all, no-one would have to force you to pay your debts, would they?

If you want to write Shareware it is essential that you are prepared to trust. If you don't feel able to do this, then don't write Shareware! You will never be happy. You will worry about people using your program without paying and will feel driven to try to *make* them pay. Soon, you will become as obsessed about this as some of the conventional software houses, and your attempts to 'encourage' registration will actually do exactly the opposite. Think carefully about this before you start. If you can't be philosophical and say 'well, he hasn't registered yet, but one day he might', then stay away from Shareware.

## Competition winners

Last month's special offer was a set of discs containing the winning programs in the APDL competition. I'm not going to list them all again but if you didn't send for this collection, this is your last chance. The price is just £3 (which is a bargain for over 3Mb of material), or £13 if you want the fully registered version of the hard disc backup program !ClicBack. The additional £10 gets you a laser printed manual and **all** the extra money goes to the Cancer and Leukaemia In Childhood trust. Please send either stamps or a cheque to the APDL address and specify whether you want 1.6Mb or 800Kb discs. ♦

# Gerald's Column

## Gerald Fitton

Since writing my articles on monitors and back-up storage I have had many interesting letters about those two subjects and suggestions for many more subjects. Sifting through the requests, it would seem that what you want me to deal with next is printers. Firstly, here are some other points.

### Squashed lines

In Publisher, but not in Style, you can get the strange effect of lines being squashed vertically (on screen as well as the printed version).

Choose your base (normal) style and edit it with <ctrl-f6>. Click on the Paragraph radio button and you'll see that one of the options is to lock to the line space grid (not available in Style). If you do lock to the grid then you'll find the occasional line is squashed vertically.

Danny Lawrence reported this in last month's Archive (issue 8.9 p10) but attributes the problem to his BJ300. He doesn't say what software he's running, and he may have an unrelated problem, but he does say that he's noticed it in Archive – and I know that Archive is produced with Publisher.

The option to lock to the line space grid does not exist in Style but, if someone sends you a document with that attribute to a style built into it then Style will accept the lock just as if you'd created it – but you can't get rid of it!

A difficulty you'll have with Style is that, if you created such a document in Impression II (where locking to the line space grid worked rather better than it does in Publisher), then you can't get rid of the lock in Style!

*(Our squashed lines aren't the same as yours, Gerald. Ours are more like a horizontal line of dots missing on the printout, but not on the screen, and if you print it again, it's usually OK. Ed.)*

### A TurboDriver problem

A couple of people who had 2Mb machines have reported to me that printing anything but the smallest files with their Turbo Driver caused the machine to hang, with a variety of error messages.

The exact nature of the error message depended on what was running at the time. They fitted more RAM (4Mb) and the problem went away (almost).

It seems to me that this is another example of memory management problems (by RISC OS?) which seems to affect those packages such as Fireworkz and Style which dynamically vary the amount of memory they claim during execution. The memory management problem seems to arise if two packages want to change the amount of memory they are claiming simultaneously – if that's possible. So, if you have one package working away hard in the background (e.g. the printer) wanting to claim, or release, memory and you have another package which also wants to do the same thing, then RISC OS gets mixed up and (if there isn't enough memory to go round) it loses its pointers.

A work around seems to be to avoid doing two things at once. For example, don't try to scroll the screen whilst printing is taking place in the background. But that workaround rather negates the usefulness of background printing.

### Fireworkz Pro

The latest version of Fireworkz Pro is version 1.22.

Colton Software have a special offer running between 1st June and 31st July. If you buy Fireworkz Pro, or if you upgrade to Fireworkz Pro from an earlier Colton Software package, they will send you, free of charge, a copy of Fireworkz for Windows, if you ask for it. Fireworkz for Windows is usually £99 (plus VAT and postage). At some future date, for a fee, you will be able to upgrade your Fireworkz for Windows to Fireworkz Pro for Windows.

### How much have I won on the lottery?

It's only a few days since I received my Archive but already I've been asked this question (and other similar or related questions). Perhaps my remark "my second law of gambling will allow you to make an unfair bet" was taken by you to mean that I was justifying to myself that it is OK for me to bet on the lottery.

I've won nothing on the lottery because I've never bet on it. Winning the lottery is a wish which I don't want to come true! I'm not sure why, but Paul's comment on the inside cover of issue 8.9 has helped. Perhaps somebody can explain to me why I don't feel the same way about premium bonds. Maybe I'm just being inconsistent but somewhere deep down I feel the National Lottery is immoral.

Let me answer another of your questions briefly. My first law of gambling is "Never bet on certainties". After I've received enough comments (and if Paul allows me space) I might tell you why. By the way, this law, like my second law, is not moralistic but pragmatic and (hint) part of my Management Decision Making course.

### **Systems – Some general principles**

If there is one piece of general advice which you should heed above all others it is that you should think in terms of the whole system rather than just the computer box. By this I mean that you should think of the monitor, printer, back up storage and your software packages not as isolated parts, but as elements which contribute to the efficient functioning of your whole system.

Back in the days of the BBC (around 1980), the things you could do with a computer were very limited compared with the range of things that you can do now. Features which we almost take for granted now such as multitasking, high screen resolution, millions of colours and high resolution printouts were dreams of the distant future. With these new features, you can do new things – but only if the rest of your system is of a standard such that you can take advantage of them.

The cost of the average home computer system has increased but this is not just because of the increase in the cost of the main box. Let me explain by using the monitor as an example. The cost of a monitor suitable for an Archimedes is much higher than the cost of the monitor for my old BBC B. This increase is not because the price of a 50Hz 14" Microvitec (suitable for a BBC) has increased but because such a Microvitec would not be suitable for an Archimedes. Fitting a cheap old fashioned (modes 0 to 7) monitor to an Archimedes would drag down the performance of the overall system to an

unacceptable level. To take full advantage of the Archimedes you really need at least a 17" multisync monitor.

To a slightly lesser extent the same thing applies to back up storage (floppy discs, hard discs and the like). If you want to store large, multi-coloured sprites then, if your only back up storage is floppies and a 40Mb hard disc, this will unacceptably limit your creativity.

Now to printers. Perhaps you are one of the few but growing number of Archimedes users whose main output is video or music; perhaps you use your Archimedes to do sums and just want to see the answer; but, if not, it is almost certain that you don't generate documents or pretty pictures just to be viewed on screen. You want to print them out and you want to print them out to a standard which reflects the quality of the rest of your system. It is false economy to hook up your Archimedes to a low quality printer!

### **Early printers**

At the College where I have my day job, we still have a golf ball printer! We also have a few daisy wheel printers. Every character is perfectly formed and, particularly if a carbon ribbon is used, the print quality is excellent. Even though they use the serial rather than the parallel port, printing is fast; this is because the printer receives 8-bit character codes rather than building up the letters dot by dot. (Incidentally, the golf ball uses EBCDIC rather than ASCII coding so we have an old BBC computer which acts as an ASCII to EBCDIC converter between the word processor and the printer!)

One shortcoming of these early machines is that printing is usually mono-spaced (like Corpus) and often at only one point size. Such a printer is fine if you are happy to limit your output to mono spaced, single size text (without graphics) – if you use one regularly, I expect that you have a simple word processor as your major piece of software. Perhaps you don't really need a high powered Archimedes – probably you aren't reading this! But let me know if you are.

### **The dot matrix printer**

In the early days of PCs (early 1980s), the definitive dot matrix printer was the 9-pin Epson FX80. I still

have one and I use it with my Archimedes for tractor feed labels. I remember how pleased I used to be with the graphics output but, when I open my dusty files (usually to look up an old college assignment) I find that they don't look as good to me now as they did at the time! I'm a lot more critical now.

Under my high power laboratory microscope, some many years ago I measured the dot diameter of my 9-pin printer and found it to be about 0.015" (which is about 0.35 mm). The FX80 has a graphics printing mode which professes to produce 216 dots per inch vertically. To save you doing the arithmetic, 1/216" is about 0.0046", one third of the dot diameter! At this dot pitch, the 0.015" dots overlap. This overlap gives the impression that the image is smudged – you don't really get a resolution of 1/216".

During the late 1980s, I received documents printed on 24-pin printers and I subjected them to the same microscopic treatment. What I found was that the dot diameter is about 0.005" and, at a nominal resolution of 1/216", the dots appear to just touch. A 24-pin printer does give a better graphics output than a 9-pin at the same dot pitch because the dots don't overlap. It gives a resolution equivalent to about 200 dpi.

During the last five years, I have received many documents produced on 24-pin colour printers. The better ones have a ribbon containing four colours. I will deal in more detail with printing in colour and in shades of grey later in this article. For now let me say that it is difficult to produce the right colour balance with a dot matrix printer unless you use a new (or nearly new) ribbon.

You can still buy dot matrix printers. The prices vary from £150 to £500; the usual difference is the number of internal fonts. If your interest is mainly character printing in monochrome, dot matrix printers are fast and economical. However, if you want to print graphics in monochrome or colour, you may be disappointed.

### The laser printer

Laser printers used to be much more expensive than they are now. Generally, the price included a set of PostScript fonts held within the printer. For home DTP use, PostScript printing on the Archimedes

has never been as popular as it is on other machines. However, if your interests are in professional printed output (through a print bureau), you will need PostScript so that you can test the output.

I think it was at the end of the 1980s or early 1990s that I noticed laser printers (without PostScript fonts) being offered for the Archimedes at £1200 upwards. I bought an Epson laser printer model GQ 3500 (at about half price because they were just bringing out a new model) which is capable of a resolution of 300 dots per inch. Under the high power microscope, the dots showed a slight overlap and measured just over 1/300". The black is always the same colour of black. Unlike the ribbon of the dot matrix printer, the colour on the laser does not go grey as the toner runs out.

I have much experience of using a wide range of paper types with this laser printer and I have received documents from others who have 300 dpi lasers and the quality is totally consistent. The only differences I have found with different paper types is that some tend to curl more easily than others; some are totally unsuitable for double-sided use; some papers tend to leave a lot of fluffy residue inside the printer. As far as I can determine, these differences never affect the quality of the print.

Some time ago I 'lent' that printer to my son David. He services computer systems for a living so I asked him about laser printers. He says "For home use don't get one of the types where the toner, collector and drum are separate (they're separate in the GQ 3500 he's borrowed). Although running costs on such machines are cheaper than the ones with an all-in-one cartridge, they tend to go wrong more often and in a more expensive way than the all-in-one types. When the all-in-one types go wrong you can usually fix it by buying a new cartridge." My son also says, "Don't buy a clone; buy a known brand such as an HP or Epson and buy branded cartridges. Budget for £700 to £900" The reasons for buying a known brand, even if it is more expensive, are: (a) you're more likely to still be able to buy cartridges in the future (b) branded cartridges tend to have a more consistent toner quality (i.e. diameter of grain) and (c) they tend to have photosensitive drums which last longer than the toner (rather than failing before the toner runs out)!

Unless you want to spend a lot of money, laser printers are limited to monochrome printing.

Finally, although I have yet to receive any documents produced on a 600 dpi or 1200 dpi laser, logic tells me that, provided the resolution is real and not fictitious (cf the 1/216" line spacing on the 9-pin dot matrix) then the only problem you'll have in realising this resolution is memory, speed of processing and higher cost toner cartridges!

## The inkjet printer

Well, after 'lending' my laser printer to David, I had to fall back on a printer which I had bought primarily to experiment with colour, an Integrex ColourJet Series 2 printer. It is a Hewlett Packard 500C clone with a nominal resolution of 300 dpi. You can load it with either an HP51626A black cartridge or an HP51625A three-colour cartridge but you can't have both the black and the colour cartridge in at the same time – that facility came with the 550C onwards.

Unlike the laser printer, the (effective) dot diameter does vary with paper quality. When I use some of the cheaper papers, I find that the ink runs along the fibre of the paper – not very much but, when I look at the printed output under my microscope, I find that the dot isn't round but it has elongated, sometimes as much as threefold, along the grain of the paper. Sometimes, the ink runs out from the dot along the paper fibres so that, under the microscope, it looks a bit like a spider!

The dots on paper designed for inkjet use are just over 1/300" whereas, with poor quality paper, the dots can be up to three times that size. If you want the best (monochrome) quality, you really need to buy inkjet paper.

I have tried cartridges other than the HP brand. Some are OK, but some are not. What goes wrong with the poorer quality cartridges is that, after a while, the jets become partly blocked. This can either reduce the quantity of ink squirted into the dot or it affects the direction of the jet so that the ink is deposited slightly out of place on the paper. I have had no problem with the branded HP cartridges but they are slightly more expensive than some of the other brands.

Many of my correspondents refill their black cartridges. I have tried it – often successfully, but occasionally not. By unsuccessful, I mean that at least one (and often more than one) of the jets becomes blocked before the ink runs out. If the cartridge doesn't work, the recommended cleaning process (essentially pressurising the cartridge to blow the debris out of the blocked jets) provides only a temporary solution. I don't know why but the jets soon block again. My best guess is that the ink is no good!

Over the last few years, I have studied, with my microscope, many documents I have received from correspondents with both 300 dpi and 360 dpi inkjet printers. There is no doubt in my mind that the nature of the paper used (its absorbency) is the single most important factor which determines quality and not the subtle difference between the 300 dpi and 360 dpi printers. That is not to say that the difference is immeasurable. Not only can the difference be measured with a suitable microscope but, for the same quality of paper, it is also noticeable to the naked eye; I would describe this characteristic as crispness.

Canon were one of the first companies to introduce inkjet printers. They chose 360 dpi as their standard whereas, when HP came into the inkjet market, they felt that it was important that the printer programming language which they used on all their lasers should run with their new inkjets. Consequently, HP (followed by Epson) chose to retain the 300 dpi standard for their new inkjets.

So far as prices are concerned, £300 to £500 will buy you a monochrome inkjet printer; colour versions cost £50 to £100 more than the mono equivalent. Generally, the price differences relate not so much to the quality of the print (nor the ink usage) but to such things as the capacity of the blank paper tray, whether there is a facility for feeding single sheets (e.g. envelopes) and whether there is a straight through path. This latter is important if you want to print labels since if the sheet of labels wraps around a roller as it passes through the machine, you may find the labels unpeeling around a roller.

In spite of many reports to the contrary in other magazines, it is my experience (and that of others



who have written to me) that, even allowing for using slightly more expensive paper for the inkjet (than is needed for the laser printer), the running cost of monochrome printing using the inkjet are less than that of the laser printer.

### Monochrome summary

Don't buy a dot matrix printer unless your only interest is fast text printing. If you are interested only in the best quality and definitely don't want colour, you should consider buying a laser printer rather than an inkjet. Lasers are just under double the price of an inkjet, so you will have to have a definite need for the slight improvement in quality if you are to justify the extra initial and extra running cost.

If you decide that you want to print at least some of your pictures in colour, it is almost certain that you'll find colour laser printing too expensive and I suggest that you buy a colour inkjet instead. Read the section below.

### Colour and shades of grey

Colour is built up from mixtures of three colours. A painter can create shades of grey (or colour) by diluting black (or the colour) with white. You can't do that with the inks from an inkjet. As far as I am aware (if it's working properly) the inkjet delivers the same volume of ink every time it is activated. Shades of grey and shades of colour are achieved by the optical illusion of leaving out some of the dots.

What this means in practice is that, although the resolution of your printer might be 300 dpi, the printer driver uses blocks of four or more dots at a time to create a shade. Taking the case of four dots per block, this effectively reduces the resolution from 300 dpi to 150 blocks per inch; there are 150 of these four pixel blocks per inch. To generate more shades, you need more dots per block. If the driver uses sixteen dots per block, this reduces the resolution to 75 blocks per inch.

I find it interesting that, to my eye, for pictures which are coloured or consist of shades of grey, poor quality paper which smudges the coloured dots gives a better overall impression than the best quality paper (which allows me to see the individual, 75 bpi, blocks). Let me put it another way; coloured pictures don't have to be crisp! I have discussed this effect with a professional artist who has explained to

me that the eye detects edges (in monochrome), but prefers blended changes between the crisp edges. She tells me that artists know and use this fact by emphasising edges, perhaps even lining them in with black, but deliberately blurring all the rest of the painting.

Again, over the last few years, I have studied colour prints sent me from a wide range of correspondents and I have no hesitation in saying that those who use a four colour machine (three colours plus black all in the machine at the same time) produce better pictures than my three colour machine.

My experiments with colour at 300 dpi on my three colour machine (no black when I'm running colour) is that drawings produced by drawing packages such as Draw (with blocks of colour created by filling with the same colour) look good, but prints taken from digitised colour photographs (where the colour is graduated across the sprite) are generally disappointing. I also have a copy of ProArtisan. With it I can produce excellent pictures on the screen but, when I print them out, I am disappointed.

My conclusion is that, for digitised colour photos or paintings produced by ProArtisan (or similar packages), my 300 dpi colour printer does not have sufficient resolution – but I'm willing to be told I'm wrong.

### Colour summary

If you produce your pictures from Draw (or a similar package), there are areas of constant colour which are large enough for the optical illusion of mixing to work. A 300 dpi or 360 dpi colour printer will probably suffice.

If you are going to do a lot of colour printing then, for reasons of economy, it is definitely better to buy a machine which uses four separate cartridges rather than all three colours in one cartridge. The yellow in my three colour cartridge always seems to run out before the other colours. Because the colour cartridges are separate, I recommend the Canon rather than the HP or Epson machines. Yes! I know that the HP DeskJet 1200C uses separate cartridges but it costs over £1400 (because it can take PostScript?) – I think most other HP and Epson machines use a three-colour cartridge.

The Canon BJC600 series costs about £450 and cartridges cost about £10 a time (you'll need four – black, cyan, magenta and yellow). Quite a few of my correspondents have sent me documents produced on the BJC600, many in colour. I have looked at the paper and it seems to me that the inks used by the Canon must dry more quickly than the HP inks I use because, for the same quality paper, the dots are much smaller than I would have expected. That said, the documents I receive on quality inkjet paper are noticeably better than those on standard photocopying or laser paper.

### My recommendations

If you have no interest in graphics printing, try to get hold of an old golf ball or daisywheel printer. If you can't find one then maybe a 24-pin dot matrix printer will do all that you need. You can still buy them and they're cheap.

If your only interest is monochrome and if quality is essential, you need a laser printer. Buy the highest resolution you can afford.

Most of you will want to get into colour printing; the extra cost of colour is small compared with the benefit and pleasure. Printing drawings created in ProArtisan (or a similar package) may disappoint you unless you buy a 600 dpi or higher resolution; on theoretical grounds I'm not convinced that 600 dpi is enough! Pictures produced in Draw,

where the same colour fills a large enough area, reproduce well at 360 dpi.

For all the reasons given above, for most of you, I recommend that you buy the Canon BJC600 (four colour 360 dpi) at about £450.

### Multiple copies

A comment I've received is "many users want to produce at least two copies of many of their documents. If you want to produce multiple (RISC OS printed) copies, you'll find that most laser printers do this more quickly than inkjets. The reason is that the laser stores the whole page in its own memory and then prints the extra copies (after the first one) from memory. The inkjet has to recreate the page anew for every copy." My response is that, with an inkjet, you should print to a file as one copy (as I've described in a previous issue of Archive) and then drag the Printout file to the Printer icon as many times as necessary for the multiple copies. Even if you want only two copies, you'll find that this 'print one copy to file' method will halve the time that the machine is tied up.

### Correspondence

Please write to me direct at the Abacus Training address rather than via Archive. Return postage and an address label help more than you might at first think; my thanks to all of you who do send address labels and stamps. ♦

## Risc PC Column

### Keith Hodge

#### Software information

Whilst at the Harrogate show (see comments below) I purchased Sleuth2, as it was well received by Jim Nottingham. I can only agree with his report – it seems to cope with almost impossible originals, i.e. dirty, creased, etc. The only thing that seems to confuse it slightly, is if there are vertical lines mixed in with the text, but by using the rubber banding facilities, even this can be worked around.

One thing that I find very good about the reviews in this magazine, is that people report the *snags* as well as the good points of the software / hardware that

they are reviewing and I know that this has led to some heated exchanges between some suppliers and Paul. In my opinion, this is to the long-term good of us all, because diligent authors will work to improve the product and the poor products will fall by the wayside. This attitude is, I think, one reason why Risc PC software often out-performs PC and Mac software.

#### Hardware and software news

Jim Nottingham has sent me a copy of a letter he has received from Atomwide. It provides an update on the information Martyn Purdie requested last month about the internal screening:

"There are two types of Risc PC slice currently available: open and closed.

Open slices have holes cut in the rear for access to power supply connectors, and in the front for a 3½" drive. None of the Open slices that have been supplied to us by Acorn have been sprayed with the dark grey RFI screening paint. There is nothing that we can do about this; we do not expect to receive sprayed open slices for many months.

Closed slices have no holes cut in the moulding at all. However, they have all been sprayed with RFI screening paint."

From Rex Palmer – "I have an ACB45 Rise PC with 2Mb VRAM and the Acorn 17" monitor. I have fitted a Cumana SCSI 2 card (in the bottom slot) and it is working with a SyQuest 270Mb removable internal drive and a NEC 3Xi CD-ROM drive. Interestingly, the SyQuest announces itself (under \*devices and the Cumana set-up program) as a 256Mb device and it formats to 255Mb with 66Kb taken up for housekeeping. Also, the data block size that Cumana use is obviously different from that used on my internal 420Mb IDE drive (which only has 406Mb under Free), as a set of files (over 3,000) when backed up to the SyQuest take up 151Mb as against 145Mb.

Cumana's interface seems very good. It has (or does it come from the Rise PC?) a special icon for the removable drive which initially announces itself as SCSI 4. When a disc is inserted and the icon clicked on, the legend under the icon changes to the name of the inserted disc. When the <shift-ctrl-fl2> shutdown routine is called, the drive is spun down and the disc ejected before the switch off message appears on the screen."

Another interesting letter has come from Ted Lacey, who has been upgrading the memory of his computer, and has experienced a few difficulties, the solutions to which he has passed on – "Having purchased and installed memory upgrades to my Risc PC, may I pass the following tips to other members. I purchased a Simtec 16Mb (upgradable to 32Mb) DRAM module from NCS and although I am not a novice at electronics, I did experience some difficulty in fitting it. No instructions were supplied with a piece of equipment costing over £500 and

you can easily be misled as to correct way to fit the upgrade. Unlike the SIMM module already fitted, it does not go in to the slot with the chips uppermost – it is the empty sockets that appear at the top when the board is fitted. Admittedly, there is a notch on the board but this is not all that obvious and could be very confusing to any inexperienced user fitting the upgrade. I have spoken to Simtec and they have promised to do something about it.

Secondly, I upgraded my VRAM module to 2Mb at the same time. As this necessitated removing the existing board and sending it to NCS, I couldn't remember which way round the board should be fitted when I got it back. I couldn't find anything in the Acorn user guides, so I had to dig out a copy of a magazine issued at launch time last year. To save others the trouble, the "nobs" or capacitors on the board are fitted facing the rear of the computer."

I myself have discovered an interesting 'effect' using the Cumana SCSI 2 interface with David Pilling's Twain driver and a Canon IX-4015 flat bed scanner. I normally use a 256 colour 1024x768 screen mode with no problems. However, I have recently started to use 32K colours at the same resolution and find that this seems to be the cause thin vertical black lines appearing on the scanned image. These lines do not appear on every scan but, once they do appear, you have to reload the application before clean scans can be obtained. The big question is, what is causing the problem – RISC OS? Twain driver? or the SCSI interface? When I return from holiday, I will write to each of the suppliers and report back. Have any readers noticed this effect?

### **Wish list for the next Risc PC / New issues of Basic**

The number one addition I would like to see, is a built-in programmable timer, so that the machine can be programmed to come on at various times of the day to allow batches of FAXs to be sent during cheap line times, and CEEFAX information to be read, but without the machine having to be left switched on all day. I have resorted to using a programmable timer of the type which goes between the wall socket and the computer mains plug.

## Questions of the month

Of those who have received their 486 card and, having started to use Microsoft Windows, how many have suddenly realised just how *good* the Acorn windows system is?

## Harrogate show

I dropped in for a quick look at what was on offer, but have to admit that I left with one hour, as I found the noise from the Acorn stand unbearable. It was, I have no doubt, great fun for the younger members of the Acorn set, but I feel that if Acorn wish to enlarge their small business operations, they need to have one / half a day set aside for business users to have a nice quiet chat with people who can answer the type of questions that small business men would like to ask.

## Tailpiece

Well, my 486 card has arrived and I must say that, so far, I am very pleased. It is definitely faster than my Toshiba 486 portable when used in single tasking mode and about the same speed in multitasking mode. Dragging windows does, however, seem a little slow in multitasking mode. One thing that I feel should be pointed out, is that you will have to allocate at least 5Mb of RAM to the card to get consistent error-free operation. I feel

that, realistically, you will need at least 8+1Mb of RAM in your machine. I will have had a chance to play by next month and will report back further.

For those who have written asking what a Pietenpol Aircraft looks like, see below. These and other more modern aircraft are manufactured by members (like myself) of the Popular Flying Association under the guidance of the their local PFA inspector. The aircraft in the picture was build in about two years by the proud owner Alan James.



The image, by the way, is reproduced from the cover picture of "Popular Flying" (the PFA magazine), scanned at 600dpi on a Irlam Canon IX-4015 flatbed scanner and reduced to 90dpi with ChangeFSI. For further information, the PFA can be reached on 01273-461616.

As usual, I can be contacted by letter at the HES address on the back page, by telephone after 7p.m., or by Packet Radio from anywhere in the world, as GW4NEI@GB7OAR.#16.GBR.EU. ♦

# Interfacing the NC100

## Les May

When I wrote my original article about the NC100 (8.3 p47), I intended to follow it with a second one describing a couple of programs which can be used to transfer files between a RISC OS machine and the NC100. It has taken me a little while to get round to writing it, and I know that one or two readers have asked Paul about when it was going to appear. Please accept my apologies for the delay.

The NC100 has built-in software to transfer via the serial port both ASCII and ProText files to and from another machine. The host might be used for further processing, manipulation or storage of files, or for downloading data files or programs to the portable. To do this, the host machine must be

equipped with suitable software. A brief description of two commercial programs available for RISC OS machines is the subject of this article.

## PLink

PLink, which costs £32 +VAT from MCP Computing, Hampshire MicroTechnology Centre, is supplied as a single disc, together with an A4 instruction booklet of eleven single-sided pages and a one metre lead equipped with a rather 'chunky' female 9-pin D plug on each end. The fairly large typeface makes the instructions easy to read. Setting up the appropriate options on the NC100, and the steps in transferring files in each direction between machines, are dealt with simply and clearly.

Appropriate diagrams are given, so that the user knows what should appear on the small screen of the portable. The location of the communication ports on the Amstrad is illustrated and the possible labelling of the serial port on different RISC OS machines is described. There are also sections on creating and using textfiles with PenDown, Impression and First Word Plus.

The PLink icon installs itself on the right hand side of the iconbar and gives access to various menu choices in the usual RISC OS fashion. One option allows saving of the various default options which will be used when the application starts up.

File transfer to the host machine is initiated from the portable. As soon as the first few bytes are received, a small window opens in the middle of the desktop and the progress of the transfer can be monitored by the rapidly changing count of bytes received.

When transmission is complete, a save window opens, complete with default name. This can then be dragged to a suitable directory 'as is' or renamed. One bug that did appear was that, unless the whole of the default name is deleted and retyped, attempts at calling files PLink1, Plink2 etc, will fail, because the second file ends up being saved as PLink1, overwriting the first.

One option which can be set up from the iconbar menu is autosave. Each file is given a name set to the current time. The destination of auto-saved files can be specified by setting the NC100\$Received system variable. Although the manual 'holds your hand' throughout the actual process of setting up the options and transfer, it simply refers to <filepath> here. An example or two would have been useful.

To send a file to the NC100, it is dragged to the PLink icon and dropped onto it. The user is then prompted to 'Set the Amstrad ready to receive'. Once this is done, file transfer is started by pressing <return> or clicking the OK button. You get this even if the NC100 has already been put into receive mode. I found this a bit irritating.

### ArcLink

The second program is Archimedes Link, (ArcLink), which costs £45 from S & S Computer Advice. This comes with a 34-page A5 booklet and a suitable lead. I asked for, and received, a two metre

lead, which is about the minimum useful length. The plugs are less 'chunky' and are equipped with long knurled screws easy to tighten with the fingers.

The application icon appears on the left hand side of the iconbar. This is a bit cheeky because it implies that the NC100 is treated as just another RISC OS filing system where files are shifted by manipulating the mouse. In fact, the basic procedure for transferring files in either direction is very much as described earlier.

When the RISC OS machine is to receive a file, it has to be named and given a destination at the outset and there is no autosave facility. Below the main icon, a count of the number of lines is given, which makes file transfer seem to be slower than when bytes are counted.

The NC100 has to be set to transmit ProText files, but by choosing the correct option from the iconbar menu, received files can be converted to ASCII or First Word Plus format. A backup option allows the user to upload to the RISC OS machine unconverted ProText files containing text produced by the NC100 wordprocessor and data files for saving the address book.

Files are sent to the NC100 by the usual drag and drop method.

Although the 'manual' has 34 pages, only eight are directly applicable to the NC100. The remainder describe other programs which are supplied on the ArcLink disc and allow the transfer of programs between a RISC OS machine and Tandy WP-2, WP-3 or Z88 machines. In addition, there are several utilities for converting text files and WP-2 files to FWP format, loader modules which convert WP-2 or ProText files, uploaded and saved using the Backup option, so that they can be loaded direct into Impression, and a program which 'filters' end of line codes of files to be loaded into Ovation. As I only have an NC100 and FWP, I was not able to test most of these.

### Which to choose?

Both programs make the transfer of files to and from the NC100 a trivial task. PLink has fewer 'features' but is less expensive than ArcLink. The auto-save facility of PLink is useful if a lot of small files have to be transferred.



ArcLink cannot do that, but the ability to convert ProText files direct to FWP more than makes up for it. (I'm a regular FWP user!) This program is also a little more 'polished' than PLink, but that is just cosmetic and has no bearing on utility. Mr Shore at S & S was very helpful and clarified my queries *before* I placed the order for the NC100 or for ArcLink.

The programs were tested on an A5000 with 4Mb of memory and a hard drive. Both quit the machine cleanly and appeared to be RISC OS compliant.

If anyone is using an NC100 (or any similar machine) in conjunction with a RISC OS machine

or knows of any books or articles dealing with getting the best from the NC100, I would be interested to hear from them. I'll try to put together a third article from any responses I receive. My address is 20 Crescent Road, Rochdale, Lancs. OL11 3LF. (01706-32119) ♦

*David Holden has sent us his NC100 communication program. We have put this on the monthly program disc. It is Shareware with a registration fee of £8. David will also supply a lead to registered users for £7 - contact David through the APDL address in the Factfile. Ed.*

## PDCD 2 from Datafile

### Bob Ames

This is an attempt at a review of PDCD 2, with reference to the first disc, PDCD 1. I say "attempt" because I really don't know how to review such a large amount of software properly and still get published this century!

### Better than PDCD 1?

There was a review of the first in the series (PDCD 1) in Archive 8.2 p65 and David Holden has already said a few words about discs 1 and 2 in Archive 8.6 p12. I'm glad that Dave at the Datafile is offering an upgrade from the first issue of PDCD 1 to issue 2 with its improved front end but I wish PDCD 1 had been archived as PDCD 2. The difference in speed of initial access is very marked. With PDCD 1, I had to wait well over a minute for the first directory display to appear. This is because all the pretty icons for the different sections needed to be loaded from CD before the directory display was available.

With PDCD 2, all entries in the first directory are archived, (with ArcFS) so it is the ArcFS icon that is used for all directories. This means that there is a comparatively short wait, in the order of a few seconds when opening the root directory. This may not seem important but, with hard resets necessary to escape from most of the games and demos (see later), the time taken to overview software increases

dramatically when minutes are wasted waiting for the directory to display.

### Risc PC or pre-Risc PC?

The majority of programs on PDCD 2 have been tested for Risc PC compatibility. A floppy accompanies it which contains a RISC OS 3 version of ArcFS which I needed to read the entries, as the version otherwise supplied is Risc PC only. So with pre-Risc PC machines, instead of double clicking on the archived icon, the file has to be dragged onto the ArcFS icon on the iconbar. If double clicking is attempted, a polite message appears reminding you that you don't have a Risc PC!

### Duplication

There are some minor repetitions from PDCD 1 to PDCD 2. Some of the games, for example, occur on both, and I spotted half a dozen duplicate sillies and a couple of duplicate utilities, too. However, there are a couple of games with very similar names and that causes confusion!

Considering the vast number of files on these discs, I don't think the duplication rate at all bad. There are a couple of deliberate duplications, such as Translator and FYEO2, without which the picture files are difficult to use.

### Documentation

The manual shows (perhaps?) a slightly hurried preparation to get the library published on CD - the

games, demos and utilities are not listed in alphabetical order, but in sections which refer (although you aren't told this) to the contents of the individual directories. This should have been tidied up before printing. The manual still refers to (floppy) discs and is not thoroughly debugged – there are some spelling mistakes, some contact telephone numbers only partly printed, and some other strange references.

### Locating the software

When I got around to using the built-in database to look for various applications etc, I did have a bit of trouble with the search engine. I could not get it to find any references to programs which I knew (from the manual) were on the CD. This fault was not repeated, however, but the search still only finds some of the references contained within the descriptive text.

### So what is on the CD?

There is a huge selection of good games and utilities on this disc, although some of the games and demos still require a hard break to quit. Yet more do not have an option for displaying the instructions at loading and even more omit the vital volume control.

Notes to Game Authors: 1) Try over-viewing games software (or just enjoying yourself!) while the kids are asleep, and then, when the game music plays at full volume, try to get them back to sleep again without tears!

2) Please tell us how to avoid your long “ego trip” at the start of each game – I refer to the interminable introductory scroll-text which claims responsibility for the code, then goes on (and on and on) to thank “all at home for the continuous stream of coffee and the dog for not biting through the mains cable” etc, etc, etc.

I have been put off a large number of PD games because of these two faults! They were probably otherwise quite good, but I didn't have the patience to find out!

The full contents of fifteen books are available, mostly Mark Twain texts, and I'm still not sure about value of complete books being stored digitally – I would rather read the printed page. Apart from

the facility of searching for all the occurrences of a particular word in a novel, it would seem far better to input *reference* books onto computer, however important each fictional work may seem to be.

Other contents include:

a large selection of clipart including 85 Artworks files, 900 drawfiles, 260 sprite files

18 film type animations

15 commercial demos (restricted versions of programs, sometimes known as crippleware)

more than 35 demos (the sort of thing which I sit watching while part of me wonders how long it took to program, and how I get out without destroying the CMOS ram settings forever!)

There are some Morphs, but they seem to me to be quite poor examples. – the subject's eyes don't stay in the same place while the image changes. These are poor adverts for the Acorn's capabilities – I've seen some brilliant displays on the Macintosh!

The sound samples are in utility format which releases memory after use and allows use in other programs. (However, most of these samples seem to be from Star Trek TNG!)

Other headings include educational software; fractals; 50 Maestro songs; PC Emulator software; ray-traced pictures; sillies; sound-trackers; and Symphony files.

### Overall

These two discs, PDCD 1 and PDCD 2 together, contain about 80% of the currently available PD software for the Acorn machines; to quote Dave McCartney of the Datafile, “another 15% is not worth disc room and the last 5% is being considered for the next in the series” (PDCD 3?) along with newly minted offerings.

This is great value for those who don't have much PD software; still quite good if the stuff you do have is a couple of years old. (For example, my copy of !Translator was giving trouble, but then I discovered it was four versions old!)

PDCD 2 costs £30 inclusive from The Datafile or £29 through Archive. ♦

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# Running Basic in a Task Window

**Brian Cowan + Martin Dann**

In our laboratory, we often run relatively simple Basic programs to perform various calculations. A trivial example of this might be the conversion of a temperature from Fahrenheit to Celsius. If you click on the program in a filer window, the program runs in a small window on the desktop. The disadvantage is that all other tasks are frozen until the Basic program is quit. The way round this problem is to run the program in a task window. The task window is a convenient facility for running a program in a window in the desktop without requiring the full complexity of WIMP programming.

## Opening a task window

In RISC OS 3.1, a task window is opened from the task manager acorn on the iconbar. Clicking <menu> over the acorn opens a menu window, one of whose entries is "Task window". Selecting that option will open a window displaying the command line prompt star. You will also see that <ctrl-f12> is a short-cut to opening the task window. Once the window has been opened, you can go into Basic by simply typing **BASIC** and pressing <return>. After this, you have your own little Basic environment from which you can run programs. Remember that Basic commands must be typed in upper case characters.

From the Basic prompt, you can type programs, save and load them, as well as performing star commands. So if you have a program saved, it can be loaded and run in the usual Basic manner.

## Automatic operation

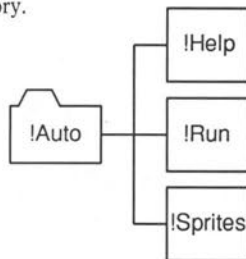
What I wanted to do was to be able to click on a Basic program to get it to run in a task window. I had a hint that this should be possible from reading the RISC OS 3 manual which listed the new filetypes &FD7 and &FD6 which are for Obey files and Exec files running in a Task window. The reason these work in the way they do is because the run action for these filetypes is defined in the system variables Alias\$@RunType\_XXX. It would be a simple matter to redefine this system variable for the Basic filetype &FFB. Unfortunately, this has the

problem that *all* Basic programs would then be run in task windows – even those which should run in the conventional manner.

What we have to do is to define a new filetype for Basic programs that we wish to run in a task window. For the purposes of this article, let us adopt the filetype &0A0 which I shall give the textual equivalent AutoBas. Then the system variable alias\$@RunType\_0A0 must be set for the action required when clicking on files of filetype &0A0.

## Building an application directory

The simplest way to implement the running of AutoBas programs in a task window is by using an application directory. The diagram shows the structure of the directory.



Start by creating a directory called !Auto. Then go into this directory (by clicking on it with the shift key pressed). The !Help file can be created using Edit. This just contains a few lines saying what the application does, such as

```
Auto running Basic program in task window.  
Set filetype of Basic program to &0A0.
```

This is saved with filename !Help in the !Auto directory. The file will have the correct filetype, Text (&FFF). The !Run file is created similarly using Edit. This contains

```
| !Run file for !Auto  
set alias$@RunType_0A0 TASKWINDOW -quit |"  
BASIC -quit %*0 |"  
set File$Type_0A0 AutoBas  
IconSprites <Obey$Dir>.!Sprites
```

In this case the file must be given the Obey (&FEB) filetype. Finally, a !Sprites file must be created. This contains the sprite which will be displayed as the

## Basic Programs in a Task Window

application sprite in the filer window, named !auto and the sprite which represents the new AutoBas filetype. This sprite is named file\_0a0. You can modify an existing sprite, but they must be given the correct names, and the sprite file called !Sprites, when saved.

### Auto booting

As it stands, the application will be initialised by clicking on the !Auto icon. After this, AutoBas programs will be run in a task window by clicking on them. If you don't want to have to click on the !Auto icon to initialise things, you need to have an Obey file called !Boot with the same contents as the !Run file. Then things are initialised automatically, as soon as the !Auto icon is seen by the desktop.

### Basic programs

The simplest way to create Basic programs to operate with !Auto is to write them in Edit and to

save them with filetype &0A0. When such programs are run, the first line in the task window says "program renumbered". This does not happen if the program is in tokenised Basic form. In that case, the program is run without the disconcerting message. However, to create the program in tokenised form is a little inconvenient. The program is still written in Edit, but it must then be saved with the Basic filetype (&FFB). Then the filetype of the program can be changed to &0A0. There is the further disadvantage that if such a file is dragged to Edit for alteration, it will appear as garbage as it is being displayed as Basic tokens. The filetype must be changed back to Basic before editing.

This month's disc contains the full !Auto application, complete with sprite and an example program. Perhaps readers can come up with some other uses for this small application. ♦

## Pocket Book Column

### Audrey Laski

#### Power pack blues

Dedicated readers of this column may remember that I had to get a faulty socket in the Pocket Book fixed because of interruptions to the flow through the Power Pack – I am a miser about batteries and so plug in whenever possible. After its return, I had no problems for about three months; then suddenly the little green light went out and stayed out. This time it was the insulation of the lead at the APB plug which had gone. Avie Electronics of Norwich could supply and fix a new lead for £9.99, and they did so in stunning turn-round time. It was back in excellent order on the second day after posting it to them. Since then I've had one mysterious glitch when, for ten minutes or so, the light was out though both ends were well plugged in; I'm at a loss to explain this, but I'll notify any developments.

#### A-Link speed

Julian Midgeley, a Psion 3A user, of Bovey Tracey, Devon, writes about using the A-Link at 19200 baud to double the speed of data transfer. He does this by loading !RUN from the !PocketFS directory

into Edit and changing the twelfth line from the top:

```
SetEval PocketFS$Baud 0
```

to read

```
SetEval PocketFS$Baud 8
```

and saving. He then changes the remote-link baud rate option on the Psion 3A to 19,200 before turning it on. He says, 'I don't know why this wasn't mentioned in the manual as I have had no difficulties whatsoever at the higher speed. I suspect that 19,200 baud wasn't available on the original Pocket Book or Series 3.' Having tried in vain to emulate him, I think this must be the case, and wonder whether Pocket Book II has this capability. Perhaps a user will test this out and let me know.

#### Spreading the word

He mentions in his letter how useful the Psion 3A is 'on board a 5000 tonne ship at sea', supported by a Canon BJ-10sx. Similarly, John Woodthorpe praises it as a travelling companion, enabling him to check local times when he was in 'a different time zone each day', write reports in airport departure lounges, keep track of expenses, and, with a modem, 'log on

to CompuServe to keep up with my email!' In "Any Questions" on Radio 4 the other week, Ann Robinson, formerly of the Institute of Directors, spoke warmly of her 'tiny computer', mentioning Psion by name with a slight hesitation as to whether it was proper to do so in a BBC broadcast, and a few weeks before that, the Guardian's "Me and my Gizmo" column featured a 3A. Psion's new advertising campaign is punching the message home, graphically demonstrating the advantage of a palmtop, which increases its information without increasing its size and getting stuffed with papers as

file/diaries do. I've heard it suggested that the best use of the Lottery Millennium Fund would be to put a computer on every school pupil's desk – perhaps we should campaign for the more affordable aim of a Pocket Book II in every satchel.

### Endnote

This is a very short column. Can it really be that all the enthusiastic Pocket Book/Psion users out there have run out of problems, tips and experiences, or is it something I've said?! ♦

## Font Emporium CD-ROM

### Ted Lacey

For those DTP buffs who like to have a lot of fonts but lack the storage space, the new CD-ROM from Zenta Multimedia is the answer to your prayers, always assuming that you have access to a CD-ROM drive on your setup.

Basically, the CD-ROM contains the 500 PD fonts regularly advertised by Skyfall, plus another 50 or so additional fonts. (Yes, there is a business connection between Skyfall and Zenta.) This large amount of fonts will surely meet the needs of those who, like me, wish to have variety. Fonts are like clipart – you can have a lot of them taking up a large amount of your hard disc space, but most of them are only used occasionally. A CD-ROM gets round this problem.

The main program, !Emporium, is organised into 15 directories, such as 3D, Heavy Assortment, Script and Sans Serif. The names of the directories generally describe the type of font. Broadly speaking, this difficult job of placing the fonts into arbitrary directories has been well done, but as this is a matter of individual taste, there are bound to be a few cases where one is not in agreement with the programmer.

Loading the main program follows the usual pattern and one is presented with the well known blue folder, with the letter 'Z' superimposed, on the icon bar. Clicking on this brings up a screen selector, divided into 15 sections, one for each of the directories. They are marked with the name of each

directory. Click <select> on your choice and this menu is replaced with another menu of the fonts directory you have chosen. On the left hand side is a list of the fonts with a slider bar to enable you to scroll through the list. Clicking on the name of a font shows details of the available font characters, and how they actually look, in a window on the right hand side of the display. If the chosen font has more than one face or style, the facility is available to select the different styles for viewing. Clicking <select> on the box to the left of the font name will earmark that font for downloading.

The program offers four different ways of exporting the chosen font or fonts from the CD-ROM.

- Raw directories can be exported by clicking on the appropriate button and then dragging the down arrow to the directory of your choice. You are warned to take care with this option in order to ensure that the directories go to the right place.
- Selecting Directory of Fonts and choosing a suitable name will create a directory containing your selected font folders.
- Selecting !Fonts Folder and again choosing a suitable name, prefixed by '!', will create an applications directory with the necessary extra bits of program, so that clicking on this application, when saved, will load the fonts into your computer.
- The exporting option only applies to those who are in possession of the font manager program !EasyFont3 produced by Fabis Computing. Due to a delay in production of the CD-ROM, Zenta issued



the compact disc without an instruction leaflet, as they felt that customers who had had the item on order for some time had waited long enough. There is an adequate !Help instruction on the CD-ROM and I understand that the leaflet will be despatched to customers later in April. (See below. Ed.) In the meantime, the !Help section provides sufficient information. It states that users of EasyFont3 require version 3.11 or later.

Herewith the first problem, as I needed to upgrade my version but, after a phone call to Fabis, this was achieved in less than 48 hours, with the arrival of version 3.14. Then more problems as I was getting a lot of error messages when trying to export selected fonts from the CD-ROM into EasyFont3. I wrote a letter to Fabis Computing giving full details of these error messages and, within 3 days, I received version 3.15, with the explanation that there appeared to have been some inconsistencies between the original specification and the release version of !Font Emporium. I have checked this version out and everything now works fine.

So to anybody who is going to use Font Emporium in conjunction with EasyFont3, make sure that you upgrade to at least version 3.15. Fabis Computing will do this upgrade for you; simply return your original disc with two first class stamps to them. These arrangements apply to all versions of !EasyFont3 – anything earlier than this and you will need to contact Fabis Computing first. If you haven't got !EasyFont3 and are considering the purchase, hold fire for the present. I have been told by Fabis Computing that they are producing a

special version of !EasyFont3 for use with !Font Emporium. It is in the final testing stages and, if all goes well, it will be available at the Spring Acorn User Show. I understand that this version will enable one to access fonts directly from the CD-ROM. No decision has been made on the price at the moment. My thanks to Sean of Fabis Computing for his prompt assistance with the problems.

So back to FontEmporium. The Examples directory contains examples in both Draw and Artworks format together with a list of all fonts and their styles or faces in an !Edit program. The !Groups help application contains a list and descriptions of the fifteen directories, with the !Help application providing adequate program operating instructions.

On the subject of Public Domain fonts, one should bear in mind that some of them are incomplete in that you will not always find upper and lower case, and many do not support the additional characters, such as the accented letters found in foreign alphabets. Apart from this, a lot of them are useful additions to one's collection of fonts.

This CD-ROM is a well-presented and economical package and is thoroughly recommended to those who want a lot of fonts, but wish to conserve their precious hard disc space. It would probably be useful in the educational world in meeting the varied requirements of pupils and staff. The fonts are copyright by Zenta and Skyfall and may be used without a site licence, but not commercially.

The CD-ROM costs £29.95 inclusive from Zenta Multimedia. ♦

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## Font Emporium & EasyFont3 CD

### Ted Lacey

Since writing the review above, I have discovered a problem with the Oxford font on the CD-ROM. When attempting to use it with Publisher, I get a long message which, briefly, states that the area of memory reserved for fonts is full or that a font error has occurred. I have tried increasing the font cache to as much as 8Mb, but the error still occurs. I have tried the font with Ovation, with similar results.

However, I am drawing the attention of Zenta Multimedia to this in the hope that the problems may be corrected on a future production run. Perhaps a corrected version could be put on a floppy disc and sent out to existing purchasers of the CD-ROM. Incidentally, the promised instruction leaflet has so far (mid-May) not yet arrived.

As regards EasyFont3, the latest version, mentioned in the June magazine, is 3.17. There are only minor changes to version 3.15 quoted in the review, but

v3.16 or later is essential if you are using the new CD version, in order to achieve interaction between the two applications.

In the review, I mentioned that Fabis Computing were working on a version of EasyFont especially for use with Font Emporium. I have now received EasyFont3CD, have tested it with the CD-ROM and found that it works very well indeed.

Installation is quite simple and clicking on the icon on the iconbar brings up a lengthy list of the fonts on the CD-ROM, all 550 of them, even if you have forgotten to put the CD in your drive! The list of fonts is displayed using the selected font. I found that reading some of them in this format is difficult, but clicking <menu> on the font list gives you a small menu which is self-explanatory.

Accessing 'Display' gives you the option of changing to a normal display which is readable. This sub-menu also allows you to get rid of the font group names, and all the fonts are then displayed in alphabetical order. It is possible to view a font and its styles from this menu, as well as the iconbar menu. The sub-menu also displays key shortcuts, *but care must be taken to position the arrow over the font display when using these, as the same control keys may be used by the text-producing application that you are using.*

One point that really impressed me was the fact that, when working on an Impression Publisher document, you can change your mind and add or

delete fonts as you go along; if you don't like the look of the font, try another, all without leaving the document or having to find font directories on your hard disc! Unfortunately, the same cannot be done with an Ovation document, although this may be corrected when OvationPro eventually appears.

When a 'saved' document is required again, dragging its file icon onto the EasyFontCD icon before loading will install the fonts used in the document. Clicking on the document file will then load it with all the necessary fonts displayed. This facility also applies to files saved using EasyFont3, version 3.16 or later, and providing the fonts used are those from Font Emporium or RISC OS3 ROM Fonts.

Fabis Computing are offering the following:

1. EasyFont3CD software and Font Emporium CD-ROM – £35
2. EasyFont3CD software only for registered users of EasyFont3 – £10
3. EasyFont3CD software and manual only for non-registered users – £15
4. EasyFont3, EasyFontCD and FontEmporium – £60

All prices include postage and packing, and items are available direct from Fabis Computing.

All testing was done on a 26Mb RiscPC with a 410Mb hard drive. ♦

## WYSIWYG for £-sign

### Ray Favre

If you like to dabble with your own programs, you will surely have sometimes deliberately produced printer output directly from your program without using a Printer Driver – and have then run into the problem of getting some characters (e.g. the £-sign) to be the same on both the screen and paper.

With progress(!) the problem seems to have got worse rather than better, because there are quite a number of keyboard presses/ASCII numbers which show one thing on the screen and something different on paper. (Which is why we should all use

printer drivers, yes, I know! But it is sometimes a lot of bother to arrange that with your own small programs.)

*(Is there scope here for an article? – "How to use printer drivers from your own programs." Anyone prepared to write it for us? Ed.)*

Overcoming the problem is not difficult in principle: "Just re-define the appropriate printer character" they all say! But getting hold of the information to do it in practice is not always easy – certainly the standard printer user manual doesn't cover it sufficiently well.

With the aid of the Epson ESC/P Reference Manual (which is, nonetheless, still a little obscure on a few of the points), I've put together a Basic routine that solves the problem for Epson ESC/P2 compatible printers e.g. the Epson Stylus. The solution ought to be general (for compatible printers), but I haven't tried it out over all the 'difficult' characters. In doing so, several other areas of possible interest arose concerning changing Epson character sets and typefaces by ESC codes. The program comments cover these briefly.

*(The listing is too long for the magazine but is on the monthly disc. If you don't want to buy the disc just for this one listing, send in a blank formatted disc and we'll give you a copy of the program. Ed.)*

### The listing

The listing comprises two PROC definitions: 'PROCprepareprinter' and 'PROCrestoreprinter' – the former having some DATA lines associated with it. You need to include those two definitions and DATA lines in your program and call 'PROCprepareprinter' just before activating the printer; then call 'PROCrestoreprinter' when you've finished with it. I've commented the procedures fairly well to help with your own dabbling.

I've included a rudimentary demonstration in the listing. It prints and puts on the screen the result of calling four ASCII numbers three times in succession: before redefinition, after redefinition, then again after restoration to the default state. The important thing is to compare your hard-copy output with what is on the screen. You'll find that, for ASCII 163, they are identical only on the second call, i.e. after redefinition.

### More detail

The following additional explanation may help:

(a) Firstly you do need to know the ASCII value returned by your keyboard when the £-sign is pressed (or whatever other character is causing you a headache). On the A5000, it is 163. You then need to subtract 128 from this and note the answer: 35 in this case. (You used to get a list of keyboard ASCII codes in the User Manual – more progress!)

(b) The recommended sequence, assuming you have the default settings of your printer as you like

them, is then:

1. Reset/Re-initialize printer to defaults.
2. Cancel Italics, Super/Sub script etc (usually a "just-in-case" action).
3. Select required print quality, e.g. LQ/Draft.
4. Copy the definitions of Characters 0 to 127 of selected ROM Character Set (& typeface) to RAM.
5. Redefine the required character(s), using the ASCII number 128 less than the character number to be changed. i.e. 35 rather than 163, in this case.
6. Copy the new RAM set up to ASCII Character numbers 128 to 255.
7. Select User-Defined Characters for printing.

(c) All of these steps can be carried out by sending the right ESC codes to the printer, and this is what 'PROCprepareprinter' does.

(d) Step 5 is the time consuming one. You have to design the dot pattern of each replacement character and convert that to the right data values. It's not difficult once you've found out the format, but it is a bit tedious. I used !Paint with a grid equal to the required character grid (blown up to see each pixel easily) – then calculated the numbers 'by hand' from that. It's no real problem if you've only got one or two to do.

For fixed-pitch, 24-pin, LQ at 10 cpi, the grid is 36 dots wide by 24 high.

Each 24-element vertical strip is split into three 8-element parts (numbering them 1 to 3 from the top) and each of these is assigned an 8-bit number representing which dots/pixels are to be filled in. (You mustn't fill in horizontally adjacent dots for 24-pin printers.)

In each 8-element part, the bottom element represents the least significant bit. After a simple 3-number header, you then send the numbers for each vertical strip to the printer in the right sequence – left to right, top to bottom within each strip. So you end up with the 3-number header plus 3x36 numbers for each character definition (111 numbers in all).

You need to watch the vertical position of the shape because those 24 vertical elements cater for descenders, subscript, superscript etc. (For guidance, the top-most and bottom-most 'filled-in dots' I used for the Pound sign in the example were in Row 4 and Row 20 respectively. Row 20 is the baseline for characters.)

(e) The Epson Reference Manual is a little obscure in describing Steps 6 and 7. It states clearly what will happen, but the manual's separate explanations of the two steps do not match their effect in

combination. I half expected both characters 163 and 35 to become Pound signs – but they didn't.

This explains why the example program also uses ASCII 148 and 193 – I wanted to check the end-result at 35 and also at a value I had not altered (arbitrarily 193). Including 148 showed that its lower complement (20) is, as expected, not printable normally, and therefore produces a blank when copied up to 148. You could, of course, redefine this if you wished. ♦

## NetCDFast

### Robert Christmas

NetCDFast is a module which is supposed to improve the performance of CDs over networks.

There are many CD-ROMs which can be used in schools and colleges. If the CDs are available over a network, lots of students can use the same CD at once. However, CDs can hold very big files – a few students reading Replay files can bring a network close to a standstill.

At my college, we started to experiment with CDs and networks a few years ago. I remember how disappointed I was with our first attempts to read Creepy Crawlies over an Econet. It was agonizingly slow even with just one user and a quiet network. Since then, we have changed to Ethernet and the software has improved, but I was still keen to find ways to read CDs more quickly.

### Cache memory

NetCDFast runs on the computer acting as a CD server, maintaining a cache of CD data in memory. When a request to read the CD is received by NetCDFast, it first checks whether the data is in the memory cache. If the data is in the cache, it can be transmitted without reading the CD at all. If the data is not in the cache, NetCDFast reads a block of data from the CD into the cache. This block will include the required data but it may, with luck, also include data which is required next. Thus, even a single user browsing through a CD may experience some speed improvement.

The most significant increase in speed should occur when one user, or a number of users, repeat a request for data. Then NetCDFast does not have to access the CD at all.

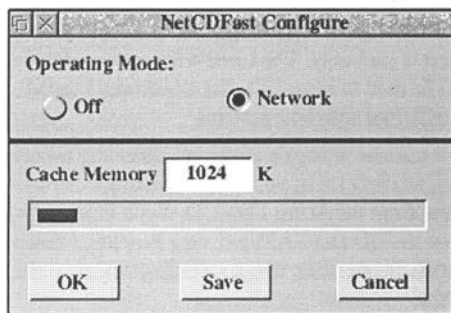
### CDFast

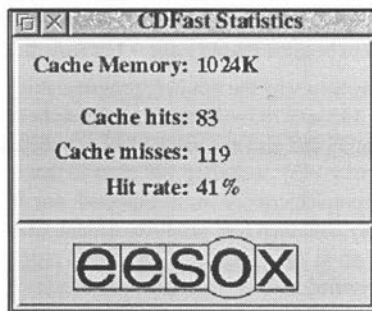
CDFast, the version for a stand-alone CD system, was reviewed by Fred Grieve in Archive (8.9 p76). Fred published detailed timings and concluded that the stand-alone version of CDFast 'works extremely effectively'. NetCDFast is a version of the software which is optimised for network use.

### The package

NetCDFast has two parts, (1) a caching module and (2) the !NetCDFast application. The application is used to configure the module and to monitor its performance. If memory is tight, the module can be used without the application.

The NetCDFast application has two windows. The configure window allows you to set how much





memory will be used for the cache. It will also switch the caching off and on. The statistics window reports on how many requests for CD data could be satisfied from the cache.

The manual is just ten pages. However, it contains all the information you need to use NetCDFast. It also includes some tips to get the best from your CD-ROM system.

## Timings

I attempted some timings of NetCDFast. It wasn't easy. The network I was using is about 100m long. On it there are two Level 4 file servers as well as the upgraded A300 which I was using as a CD server. The network runs through four rooms, including the resources area, and students have access to all these rooms unless they are already being used for lessons. To perform a test, I first had to run through all four rooms begging everyone present not to use the network for a few minutes. Then I rushed back to do some tests. If the results seemed odd, I would visit all the rooms again to see if new arrivals had been logging on.

To serve CDs, we normally use the 'application accelerator' software which came with the Level 4 software. The application accelerator sends data over Ethernet in much larger packets than Level 4, but it is read-only. The Level 4 file server software can be used to serve CDs but it is slower. I tested NetCDFast with both systems.

The test was to copy a directory containing twenty files, totalling about 600Kb (the Granny's Garden demo from the Acorn User CD, if you must know) from the CD to a RAM disc on a Risc PC. I timed the whole operation which including writing to the RAM.

The version of NetCDFast was 2.01. The CD server was an A300 with 2Mb memory connected via a SCSI 1 interface to a Cumana 6 Tower CD drive.

| Level 4      | Normal   | NetCDFast |
|--------------|----------|-----------|
| First copy   | 155 secs | 42 secs   |
| Other copies | 154 secs | 25 secs   |

| Application accelerator | Normal  | NetCDFast |
|-------------------------|---------|-----------|
| First copy              | 38 secs | 25 secs   |
| Other copies            | 38 secs | 8 secs    |

These results show that NetCDFast can achieve significant speed improvements. However, they can only be a rough guide to its performance. There are so many variables, including the network hardware, other activity on the network, the size of the CD cache and the access pattern for the CDs. Repeated requests for the same part of a CD are best for NetCDFast.

Quite small speed improvements can make major differences to the performance of a network. If requests for data are received at one second intervals by a server which can satisfy each request in 0.99 seconds everyone is happy, but if it takes 1.01 seconds to handle each request then, before long, someone will be unhappy. Mr Micawber said something like this.

## In use

NetCDFast was simple to use. It was copied to a hard disc on the CD server and run from there. On our system, we decided to increase the cache from the default 256Kb to 1024Kb. You can save the configuration. The manual suggests that you set up your computer so that NetCDFast is run on start-up.

We have been running NetCDFast for two weeks without any problems. About half of the requests for CD access have been satisfied from the 1024Kb cache. When asked, students have said that CD access seems faster – but then they would probably say that anyway to humour me!

The manual says 'NetCDFast will run on any version of CDFS, all CD-ROM applications,



CD-ROM drives, any Acorn Archimedes or Risc PC and any network system in any combination. NetCDFast has no restrictions on the number of users, CD-ROM drives or the way CD-ROM applications are used over the network.'

Before using any CDs on the network, you should check that this is permitted by your licence.

## Conclusion

NetCDFast does speed up CD access over a network. In ideal situations, it can be as much as six times as fast. It seems reliable and it should work with any combination of hardware/software. It is produced by Eesox and is available from Archive at £148. ♦

# Clan Acorn Column

## Simon Ogilvie

In last month's Archive, Paul appealed for someone to edit a column dedicated to the Acorn Clan. He had several responses, and three of us will be trying to put together information for a monthly column from now on. That's Roger Woodhouse, Sam Gardner and myself – email addresses below, should you want to contact us.

As the main thrust of the Clan is dialogue, any of us would be happy to receive email, and we will also be keeping in contact with Chris Cox, the Acorn Clan Manager whose email address is also given below.

## Clan history

To begin at the beginning (as they say), and for the sake of those who are unsure what Clan Acorn is, here is a brief recap. Acorn realised that there was a wealth of largely untapped resource in the form of enthusiastic users whose ideas and reactions to the release of the Risc PC might be useful in its future development. The idea of an enthusiasts' club was thus conceived and, after adding flesh to the bones, Clan Acorn was announced and then launched at the October '94 Acorn World exhibition.

For a one-off fee of £15, Acorn enthusiasts were given an information pack, a high density disc of interesting software and information (to the dismay of those without HD disc drives!), a Clan tee-shirt, sweatshirt, lapel badge and mouse mat! We were also tempted with the promise of discounts, pre-release information, competitions and exclusive deals for Clan members.

One of these was the release of Acorn C/C++ which was offered to Clan members at a 30% discount, and this was well received, with a large number of

members taking up the offer. Subsequent Clan information packs were sent out to members in February and April, and the next pack should be out by the end of June.

## ARM700/710 imminent?

All of this has generated quite a bit of interesting discussion on the Usenet newsgroups, which Acorn keeps a close eye on, and posts articles to from time to time. A recent posting from Chris Cox announced that the ARM700 series processor cards would shortly be released, and he requested feedback on whether users felt a fixed point ARM710 card would be more attractive than a slightly more expensive (and slower clocked) ARM700/FPU combination. This prompted a lot of discussion, but a majority thought the fixed point 710 card would be more useful, so that is the card that will be made available first, hopefully in July and running at 40MHz, with the 700/FPU card following on later.

## Internet access

Acorn is obviously heavily committed to the Internet in all its forms. The Acorn World Wide Web site, which was previewed at the recent Harrogate show, will shortly be coming on line in its full form. Acorn plans to make this the primary means of communication, and there will be an area specifically for Clan members which will be password-protected from everyone else! This area will contain much of the information in the Clan mailshots, and you will also be able to download software, such as that on the Clan discs and on the Acorn ftp site.

Acorn's news and mail package "Intertalk" is soon to be released and will allow Acorn machines to dial up to news and mail servers, and download

unattended. This means it can be done at night when the calls are cheapest and the machines least heavily loaded, making downloads faster.

### New filecore?

Another development frequently talked about on the Usenet newsgroups is the rumoured replacement to the filecore. With easy access to cheap large hard disc drives, the main problem with the current filing system is its limit of 512Mb per disc. This has been partially overcome in some SCSI implementations which allow larger discs to be partitioned into two or more parts, each of less than 512Mb, but the core limit still remains.

A new version of the filecore has been under test at Acorn for some time now, and Clan members will soon get the opportunity to be the first users to try it out! Initially, this will take the form of a soft-loadable module, but eventually it will be incorporated into future operating system releases. Acorn is deliberately being very cautious about the release of the new filecore, as any bug in the code could have potentially disastrous consequences on users' data.

### Feedback

The primary driving force behind all areas of the Clan is for Acorn to get feedback from its users. Clan members can take advantage of all the special offers Acorn provides, but if they never give any feedback, they and Acorn will fail to benefit from

what is a pioneering project in the computer industry. Acorn doesn't have the advertising revenue of its larger competitors, and so is dependent in part on word-of-mouth advertising.

They are also keen to hear of any stories of Acorn computers being used for interesting or unusual tasks, or where they make the job easier than if a different computer had been used, which generates its own "real-life" advertising.

Chris Cox's diagram from last month's Archive (p24) showed Acorn's development program being fuelled by feedback from Clan members based on information supplied to them by Acorn. The cycle is dependent on a constant dialogue between Acorn and Clan members, and it's the Clan members who stand to gain most from it in the end! Hopefully this column can become part of that cycle. ♦

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To join Clan Acorn costs £15 (or £20 if you want a sweatshirt as well). Either write to Acorn Direct in Wellingborough or phone **01933-279300** with your credit card details. ♦

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## NStore – Version 4

### Richard Rymarz

As an (overworked?) headteacher with a full time teaching commitment, I am always looking for ways of making my life that much easier. One area of classroom planning that has proved to be particularly vexing is that of recording children's attainment across the National Curriculum and issuing reports for parents. If any regular reader has noted my comments in other reviews, they will be aware that I am not a fan of the National Curriculum. However, I have learned to live with it and when I was given the chance to review NStore, I hoped it would make my planning easier and help organise my recording much more efficiently.

### The program

NStore comes on an 800Kb disc (in fact, there are two discs and registered users can order more for £1.95 each) which cannot be installed onto hard disc. However, the data and 'comment' files can be backed up, and this should be done regularly, in case the program disc becomes corrupted. The master disc should be kept inside the drive at all times.

### Aims

NStore allows teachers to keep a record of up to 108 pupils and their achievements on the Statements of Attainment in all National Curriculum subjects, including RE. It can store basic information about

each child, record attendance levels, SAT results and exam and classwork percentages for each subject. Information can be stored of up to 72 Topics and the Statements of Attainment they cover. There are 800 teacher's comments which can be used for reporting and can be amended using !Edit. Reports can be automatically generated by being placed into logical order taking into account the child's age and progress. Finally, all these records can be exported to other packages for final presentation.

## **Getting started**

What is immediately obvious upon loading the program and clicking of !NStore is that it only works in modes 12 and 27. Furthermore, the program does not run within the desktop. This is disconcerting at first since we are all used to the luxury of a full RISC OS environment. However, I soon adjusted to this and was presented with the Child Menu. Basic information – name, age, sex, class name and teacher, etc, is then entered. The general class level can be set and there are further features which become useful when more information is added. The menu is quite long and it takes some time to navigate around the various options.

I entered the children in my class and moved on to the Topic Menu. Here I typed in the topics I would cover for the Autumn term and set the attainment targets covered by each of the topics. Reverting back to the child menu, I then marked the children's progress through a simple set of mouse clicks. This process is fairly tedious especially since each subject has to be accessed for each child. However, there are short cuts that save some time but, basically, entering the data for the first time is time consuming and a little daunting (I think that is the same with any database). This screen also allows the teacher to enter general comments on attitude, effort, attainment, presentation, a specific subject, as well as SAT data.

## **Reporting**

I eventually completed this for a number of children in the core subjects and clicked on the 'Report' menu. Various options are offered, including a direct print to any Epson-compatible printer. Those with RISC OS printers will have to export files in

ASCII or CSV format to another package. Reports are quickly generated and I must say I was quite impressed with the results. The format was well structured and in acceptable English although there were too many sentences beginning with the child's name or the word 'Her'. There is the option to export reports as CSV files to Impression or Style using the mailmerge facility. Presentations can then be prepared in Impression, and the accompanying literature suggests that single or batch reports can then be very quickly produced. I do not use either program, so I cannot comment on how efficient this process is.

## **Other features**

Other features include the ability to enter exam results, update old data files from previous versions, obtain simple graphical data, move data between groups (useful when children move between classes), sorting and searching facilities and the ability to alter the teacher comment file.

## **Conclusions**

I was apprehensive about using a package such as this since I was uneasy about its claims and its usefulness. However, having used it for some time now, I feel it has real value, especially if the user is prepared to spend time learning how to use it. Whether less committed teachers can be persuaded to use it is dubious because of its complexity. I feel that a better designed manual would be of great assistance. A step-by-step guide is really needed to direct less confident users. Perhaps a dummy file could be included to see the possible uses and outcomes of the program. As it stands, the manual covers all there is to know but it is not easy to follow. An index would also help. However, as I discovered, NStore can save time in the end.

I have one or two other improvements that would help the user. I do feel that there should be a better structured set of menus leading from the three main areas: Child Menu, National Curriculum Menu and Topic Menu; any new version should be fully RISC OS compliant; printing should involve the standard RISC OS drivers; and the program should be able to be installed on to hard disc. I also managed to crash the program on my Risc PC – but this was very rare. I have spoken to the author who says many of

these suggestions are on his wish list to develop the program. However, time is his greatest enemy but he hopes to include some of them in due course.

Registered owners will receive a post-Dearing upgrade at nominal cost. This should happen in Spring 1995 so that users can prepare for the new curriculum that comes into force in September 1995. Another new feature which may be ready is

the facility to store individual records of work for special needs under the new Code of Practice. My advice to prospective purchasers is to wait until the new version arrives, and if you need an aid to National Curriculum management and access to impressive reporting, then at £44.95 inc VAT from HS Software (or £42 through Archive), NStore is well worth it. ♦

## Rainbow

### Richard Rymarz

This is another new program for younger children from Longman Logotron. It is designed as a "simple multimedia program" that will "allow teachers and parents to produce exciting activities on any subject, quickly and easily". So says the introductory passage in the accompanying manual. Intended for use at Key Stage 1 (5-7 yr olds), it is claimed that the program can be used for any age or ability, since the content is created by the maker of the activity. Not only can words, pictures and sound be used, but video pictures using Replay can also be included. Grand aims and wonderful, if true. So I set about familiarising myself with the programs.

### !Rainplay

This application allows children to use the activities designed within Rainbow. Three sample files are included which give a fair overview of what can be achieved. Two are similar to My World, an excellent program designed by SEMERC. Having used both, I have to say that at a *simple* level, My World is easier to use and more flexible. However, if more complex and full multimedia options are needed, then Rainbow uses sprites as well as drawfiles; involves sound; links with other screens; defines actions such as quitting, removing objects, scaling objects, stopping sound and music; and uses movies. Altogether a more comprehensive package.

### !Rainbow

!Rainbow allows teachers to create activities for children to use. I began by working my way through the tutorial, opening a window containing three folders. I clicked on the Screens folder, and the Tutorial Screen opened contained the words, "This

is the tutorial screen" and a tool box. I now clicked on the resources folder. I soon had a 'Type' sprite and a 'Delete' sprite on my screen. All straight forward so far.

Using the arrow icon on the tool bar allowed me to change the position of the sprites. Now I doubled clicked on the 'muncher' (the delete sprite), and a dialogue box opened, which actually did not quite correspond with the manual. Undeterred, I continued and assigned the command 'Remove Object' to this icon. I confirmed my choices and did the same with the Text icon by allocating 'Text Style' to it. I also chose the font I wanted to use. Deleting text is simply a matter of highlighting the words and using the menu or <ctrl-X>. Now clicking on the smiley face icon on the tool box allowed me to test my screen – all worked well.

Another option on the toolbox is a text icon. Clicking on this opens a now familiar dialogue box and an appropriate action can be assigned to it. Other actions include rotating and scaling objects. Each is easy to understand and follow. Sampled sounds and Maestro files can also be consigned to any object. Animation results from the creation of a sprite file containing a number of sprites, each of which is slightly different. Replay files are also easily included and there is direct support for Artworks files.

Quite soon I had a tessellation activity which allowed me to rotate objects, 'bong' each time I used the red square and send a raft down some rapids when I clicked on a Father Christmas. I did not try any animation, because I did not have the patience to create my own sprite files.

## Conclusions

Well, after some work and a steady read through the manual, I managed to create my own multimedia, interactive, all-singing, all-dancing activity which was fun to use even if it was simple. The main thing is that it all worked and without too much trouble. If you are an experienced user, you will be able to set up your own activities very quickly. If you are a beginner, be prepared to spend some time experimenting with the quite comprehensive list of

options. It is certainly easier to use than some other multimedia authoring packages such as Genesis or Key Author (I have not seen Optima) although, to be fair, these are designed for older children.

Finally, I would have liked more example folders and some guidance on using the program with children at home and at school. However, at £29 +VAT +p&p from Longman Logotron or £33 through Archive, this is excellent value for money. ♦

# EasiWriter Professional Upgrade

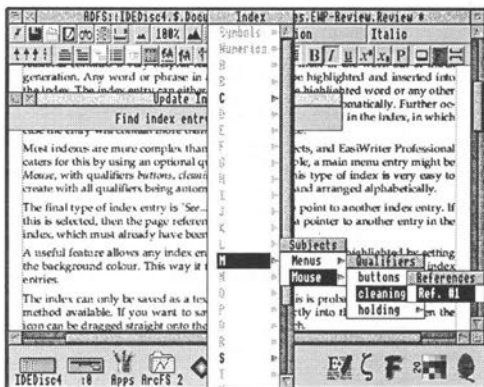
## Andrew Berry

During the last three years, I have used EasiWriter versions 2 and 3 extensively, and was therefore interested to hear about EasiWriter Professional, the latest release from Icon Technology. Although the title Professional implies a completely new product, the program is in fact just an update of version 3, albeit one with many improvements. This article deals with the changes made since 3.01 up to the present version 3.16.

## Index generation

Previously, the only way to create an index for a document was to go through the text, picking out the important words and typing them into another page. EasiWriter Professional contains a very helpful feature which takes most of the work out of index generation. Any word or phrase in a document can be highlighted and inserted into the index. The index entry can either be the same as the highlighted word or any other string up to 59 characters, and the page number is entered automatically. Further occurrences of the same word or phrase can be found and inserted in the index, in which case, the entry will contain more than one page reference.

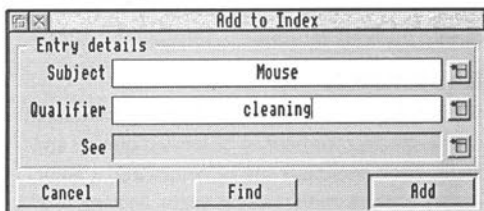
Most indexes are more complex than just a list of subjects, and EasiWriter Professional caters for this by using an optional qualifier. For example, a main index entry might be Mouse, with qualifiers buttons, cleaning and holding. This type of index is very easy to create with all qualifiers being automatically indented and arranged alphabetically.



The final type of entry is 'See...' which is used to point to another index entry. If this is selected, the page reference is replaced by a pointer to another entry in the index, which must already have been created.

A useful feature allows any words or phrases in the document which have index entries to be highlighted by setting the background colour. This way it is easy to see which words or phrases have already been added to the index.

The index can only be saved as a text file, although this is probably the most versatile method available.

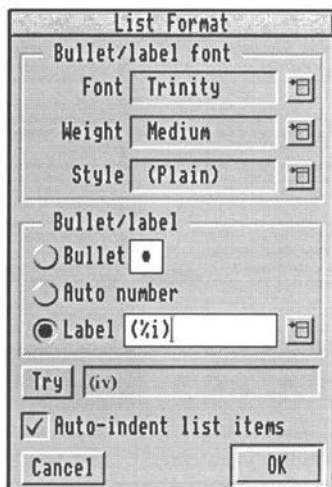




If you want to save the index directly into the document then the icon can be dragged straight onto the page – a nice touch.

### Contents generation

This feature makes a list containing any chapter, section or sub-section headings in the document. Providing your structures contain sensible headings, this will create a contents page which can be inserted at the start of the document with little alteration. The exact types of structure to be included can be chosen, and the resulting file is saved as a text file in the same way as an index.



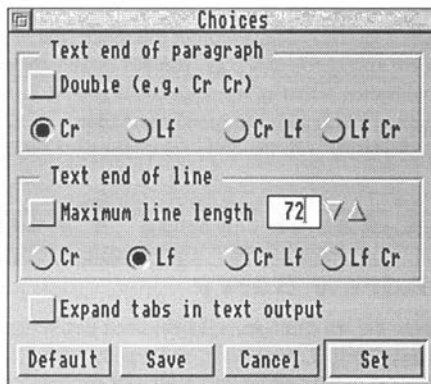
### Numbered lists

Numbering of items in a list is now supported, a great improvement on earlier versions where only bullets were available. The options for this are very comprehensive, and include Roman numerals, numbers, letters and even Dingbats symbols which can begin at any character. Text can be combined with any of the above; so, for example, combining letters with a closed bracket would produce a), b), etc. Any font can be used for the bullet or number, as with previous versions.

### Bookmarks

Bookmarks can now be inserted into documents to enable specific positions to be located quickly and easily. Each bookmark can be named and a list of names appears on the Search menu. Moving to a

particular part of the document is achieved by clicking on the name in the menu. Bookmarks are saved in the file so any that are set up will be available each time the document is loaded.



### Improved text saving

A new dialogue has been added to fine-tune text output. Options are now available to specify the way ends of lines and paragraphs are saved (e.g. CR, LF, etc) and an option is also available to expand tabs in the output – very useful for those using Edit.

### Other improvements

Many other improvements have been made to EasiWriter, including the following new features:

- Improved search
- OLE support
- Crop marks
- Improved German hyphenation
- More flexible white space
- Output as PostScript
- Auto kerning
- Specify start number for footnotes
- Draft printing

According to the Fact Sheet sent to me by Icon Technology, we can also expect the following in the future:

- Auto numbered Chapters and Sections
- Fancy borders
- RTF import and export
- Pamphlet printing
- Background colours

## Conclusion

It's good to see that EasiWriter is still being developed and improved, and I am certainly looking forward to the new features. If you upgrade to Professional now, then new versions incorporating the above features will be sent free of charge when they are completed.

The cost of upgrading is £30 + £1 p&p + VAT for single licence users, or £120 + £1 p&p + VAT for a site licence. If you are currently using version 3,

I strongly recommend that you upgrade to Professional.

EasiWriter itself is now £89 + £3 p&p + VAT from Icon Technology (£102 through Archive) and EasiWriter Professional is £119 + £3 p&p + VAT (£136 through Archive). For the record, Techwriter is £149 + £3 p&p + VAT from Icon Technology (£169 through Archive) and Techwriter Professional is £199 + £3 p&p + VAT (£225 through Archive). ♦

## Shares from Apricote

### Dave Wilcox

Shares, version 4.04, is a package aimed at the small investor, with the intention of helping them keep track of their investment portfolio. It is produced by Apricote Studios and currently sells for £39.95 inclusive, or £38 through Archive.

The software comes on one disc and is accompanied by a 37-page A5 manual, presented in a plastic fold-over type wallet. On the disc is the program, two demo files to practice with, and a text file giving all the recent upgrades. This takes up approximately 218Kb, leaving plenty of room for data storage on your program floppy if you so desire. The manual is well written, easy to follow and has been well proofed prior to its release.

### The program

Firstly, backup and/or install to hard disc – preferably both. The normal disc filing system can achieve both of these options, as the disc is not copy-protected. To run the program, double-click on the application icon to load it onto the iconbar. The programming strays slightly from the norm here because, to setup a new portfolio, you have to use setup from the iconbar menu. This isn't a problem, but a click on the icon for setup would have been more usual. If your portfolio is already constructed, a double click on the file icon or dragging the file to the program icon will set the program in motion.

On starting the program you are greeted with the main menu as a window (see diagram opposite).

This is broken into three sections, Tools, Shares, and Reports.



**Tools** – This area allows for the entering, editing or viewing of data. Also in this section is a radio button for rights issue transactions, which basically is where companies wishing to raise funds, issue new shares and offer them to holders, dependent upon their present holdings. Selection of the printer output option lets you select LowRes for dot matrix or inkjet printers or similar, whilst HighRes caters for the Laserjet owner. Also in this section is the selection of company or date filters to be applied to your data. Clicking on the company icon, a window opens listing all companies in which you have shares. All that is required is for you to highlight by clicking the companies for which you wish to see the output. The date filter works in a similar manner, requiring you to enter the start and end dates for the



and when required. I have setup and run my copy for a couple of weeks and have not had a crash... yet!

This package does the job for which it was designed, keeping track of your investment and giving you a textual or visual display of performance. It seems solidly programmed and reliable. If you like to play the market as a small investor, this package is for you.

## Comparison

There are two other shares packages available for RISC OS computers dealing with the same job, Shareholder and Shareholder Professional from Silicon Vision, priced £79.95 and £125 respectively, the latter having been reviewed for Archive (8.9 p61). It is unfair to compare this

| Company                                                                                            | Price  | Holding | Total     | Shares    | Holding | 202210.06 | Gain/Loss | Turnover |
|----------------------------------------------------------------------------------------------------|--------|---------|-----------|-----------|---------|-----------|-----------|----------|
| EComph                                                                                             | 246.0  | 295.0   | 1259.70   | (1201.09) |         | 277.89    | 0.00      |          |
| BuildingComp                                                                                       | 240.0  | 1512.66 | 3651.91   | (1775.94) |         | 1806.43   | 0.00      |          |
| Comp                                                                                               | 532.0  | 463.0   | 2469.16   | (1119.79) |         | 882.41    | 0.00      |          |
| Trustec                                                                                            | 245.0  | 3558.0  | 15079.91  | (6416.41) |         | (2178.10) | 0.00      |          |
| PumpShare                                                                                          | 207.0  | 12957.0 | 269071.74 | (97.25)   |         | 35464.29  | 0.00      |          |
| LymardShare                                                                                        | 34.0   | 125.0   | 425.00    | (102.63)  |         | (441.53)  | 0.00      |          |
| Comp                                                                                               | 220.0  | 69732.0 | 165940.75 | (2759.24) |         | 126361.56 | 0.00      |          |
| BuildingComp                                                                                       | 144.79 | 5717.0  | 8277.40   | (4351.51) |         | 1729.97   | 0.00      |          |
| Privatization                                                                                      | 224.0  | 556.0   | 1255.84   | (1647.36) |         | (1491.72) | 0.00      |          |
| Comp                                                                                               | 202.0  | 1124.0  | 2288.48   | (1056.21) |         | (441.46)  | 0.00      |          |
| GrowthInvest                                                                                       | 172.38 | 299.40  | 516.45    | (105.42)  |         | 308.45    | 0.00      |          |
| CapitalInvest                                                                                      | 143.50 | 1499.0  | 2151.67   | (1090.00) |         | 251.67    | 0.00      |          |
| Total Value £524117.47 Total Cost £175591.55 Total Gain £350525.92 Total Gain/Dividends £453965.67 |        |         |           |           |         |           |           |          |

package directly with Shareholder Professional as the latter is aimed at a different customer, i.e. the larger investor and, as can be seen from the review, it has several other facilities programmed into it for the extra outlay. Y'er pays yer money... ♦

# Hermes – The Desktop Messenger

## Peter Jennings

Hermes is the first software I have seen whose manual has a paragraph on Greek mythology to preface an explanation of what the program does:

*"Hermes was the ever-ready, swift-winged messenger and interpreter of the Gods of Ancient Greece, son of Zeus, God of Science, inventor of the lute and discoverer of fire. The Romans called him Mercury."*

*"Hermes is a fully RISC OS compliant application that can control tasks on the desktop with simple text files, examine many standard filetypes including directories, monitor and record desktop events, and perform measurements and timing. All aspects are under the complete control of the user via easy-to-use but comprehensive option windows and menus."*

A few pages further on, the overview becomes more specific: *"Have you ever needed to put a text file already prepared by another package into a Draw document or create a directory listing as a text file? Hermes can do all that. Tried disassembling a transient utility file, then adding your own comments to it later? Now you can. Have you ever wanted to load a PC graphics file straight into your DTP without having to convert it to a sprite first? Hermes is the answer!"*

The program, which comes from Base5 Technical Graphics and costs £25 (no VAT), is on a single

disc, accompanied by a 65-page flat-opening manual and a double-sided A4 quick-reference card of commands. Interactive help is supported. The manual, which could be a little more detailed in places, continues its Greek God theme, with sections entitled Hermes the Messenger, Hermes the Interpreter and Hermes the Scientist.

## The messenger

Programs which provide new commands for Acorn owners have been appearing since BBC B days. Hermes, in its messenger role, offers more than 300 of them, using words bracketed by a special character. By default this is "¤", which is easy to enter from an Archimedes keyboard, being on the same key as the £ sign, but Risc PC owners, who do not have this key, have to use the less convenient <shift-alt-3> combination. Fortunately, any other character can be defined by the user.

The commands are not entered into the document where they are to appear. They have to be written in an ordinary text "control file" and this is dragged onto the Hermes iconbar icon to cause the commands to be interpreted and entered into whichever document has input focus. Any text not bracketed by the special character is copied as written. As an example of how this works, here is a text file containing Hermes commands as it appears

when read in a text editor or word processor in the normal way.

### Demonstration 2

This transmission is timed at 0TIME10 0ZONE0 on the 0DAYTH0 day of the month of 0CMON0 in the year 0YEAR0

0NOSEND0

This is a comment. Because it is between NOSEND and SEND commands, it is not transmitted.

The following commands illustrate how OS variables can be included.

0SEND0

0Obey\$Dir0 is the directory where the last Obey file was executed. 0Edit\$Detokenise0 is a numeric OS variable while 0Sys\$Time0 and 0Serial\$Path0 are macro variables re-evaluated each time they are encountered.

0CTRLLEFTARROW00CTRLF60

0STOP0

Note the two commands at the end of the last paragraph. They are intended for Edit and cause it to format the paragraph without word-wrap.

This is how the file is interpreted on a word processor page with input focus when the file is dragged onto the Hermes iconbar icon.

### Demonstration 2

This transmission is timed at 03:25 pm GMT on the 25th day of the month of March in the year 1995

ADFS::HardDisc4.\$Apps.!Edit is the directory where the last Obey file was executed. 59604772 is a numeric OS variable while 15:25:39 and devices#:\$Serial. are macro variables re-evaluated each time they are encountered.

It will be noted that there are commands which work in a similar way to the control codes often used to enter the current date or time into word processor and DTP documents, but Hermes provides different commands to enter them in different formats. Other commands substitute names for less easily remembered ASCII codes, such as 0copyright0 instead of <alt-169> for a © sign. OS variables can

also be called by name so, for example, 0File\$Type\_FF50 is interpreted as PoScript. Another very useful group of commands provide automatic paragraph numbering with renumbering if paragraphs are inserted or removed.

However, the commands do not all immediately work with every application, as Hermes has to be programmed with those codes which are not the same in all applications, such as for end of line, delimiter and font styles. A selection of programmed-in applications is provided and others can be added if you know the code numbers they use. Also, the need to put the commands into a separate control file, rather than being able to type them directly into the document you are working on, rather limits their usefulness. Many characters can already be entered from Acorn's !Chars utility, and lists of their ASCII codes, which can be entered by typing <alt> and the appropriate keypad numbers, are given in computer user guides. The addition of a !Chars-like window for Hermes is being considered for a future upgrade.

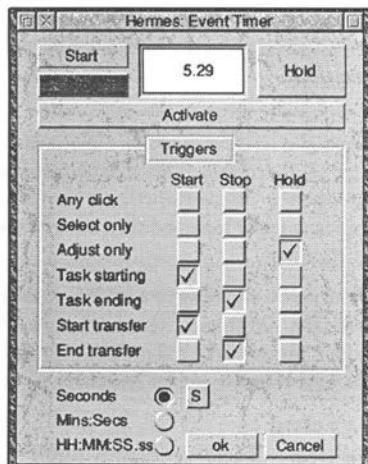
## The interpreter

If anything other than a text file is dragged onto the icon, Hermes will interpret the contents according to the filetype. Text will usually be copied into the receiver document, but certain filetypes will trigger off other actions and show details of their contents. So, for example, a template file will list the windows defined in it with, optionally, the size of the indirected data. Relocatable files are disassembled but the build-up on screen is very much slower than using a normal disassembly program. The recognised filetypes which can be interpreted are: absolute, applications, code, directory, draw, palette, relocatable module, squashed file, sprite, template and transient utility. Hermes offers a range of options as to which of the available fields of information are to be shown (too many to be detailed here) and there is also a choice of units, such as metric or imperial measurements, and standards such as RGB, CMYK, HSV or CIE for palette files.

## The scientist

In its scientific role, Hermes undertakes an interesting variety of tasks. It offers a desktop log





which will record and time-tag desktop activities in a special file. These include: filer systems starting and ending, tasks starting and ending, slot size changes, remote alarms, printer drivers changing, system device claims, palette and screen mode changes, application specific messages and directory windows closing. There is an event timer which can be started and stopped manually or triggered by mouse clicks or desktop events. A desktop monitor will display any one of the following: current or elapsed time, the co-ordinates of the mouse pointer, the window handle, icon handle or icon button type under the pointer, the task owning the input focus, the value of

the last keypress broadcast by the Task Manager or any message in hexadecimal broadcast by it or an application.

There is a very useful facility to move the mouse pointer in steps of 1, 4, 16 or 256 screen units at a time by using an arrow key either on its own or with <shift>, <control> or <shift-control> respectively. Window capture, a versatile snapshot feature, allows individual windows, the icon bar or the whole of the desktop above the icon bar to be captured as a sprite without need to define the required area, and this complements rather than duplicates the snapshot facility in Paint. Non-Acorn graphics files are recognised, and Hermes uses ChangeFSI to convert them to sprites or AIM images before loading them into your document. I could not get the graphics conversion to work (using Hermes version 1.20) on my Risc PC and this is being looked into by the program's author, who developed and tested it on an Archimedes.

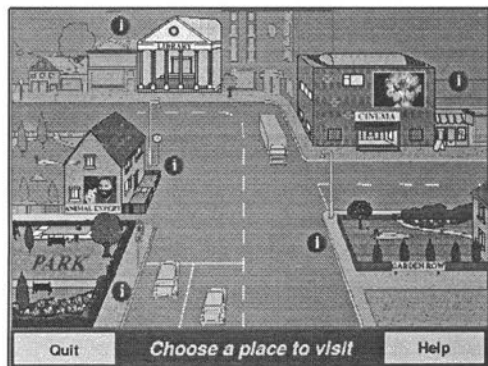
### The target

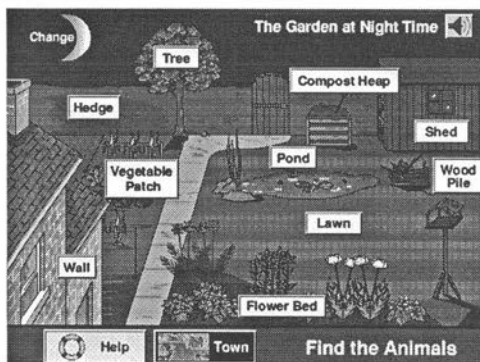
Hermes is an unusual utility with some interesting features for those who can make use of them. Some, such as automatic paragraph numbering, keyboard control of the mouse pointer and window capture, are useful facilities for any Acorn user but most of Hermes's features are clearly aimed at the more serious computer enthusiasts who will get the best use from them. ♦

## Garden Wildlife CD-ROM

### Peter Jennings

Anglia Multimedia's Garden Wildlife (version 1.00) comes on a CD-ROM in a new range which can be used on an Acorn, PC or Apple computer. It is designed to help children of primary school age to become familiar with the wildlife found in their own garden or local park and has information on more than 130 creatures. The text is illustrated with photographs, videos, animations and sound, and students are allowed to save out text and graphics to use in their own work. The price is £40 +VAT, or £45 from Archive.





On an Archimedes or Risc PC, it needs a minimum of 4Mb of RAM and, despite its multi-platform use, it works in a completely normal way. There is a recognisably Acorn type icon, called !Garden, which puts its ladybird illustration onto the iconbar and clicking on this leads to a menu window (see on the previous page). This is a picture of one corner of a town, complete with a garden, a park, a library, a cinema and the home of an animal expert called Mike. All can be visited and there are little "i" icons outside each which, when clicked on, explain what you can see and do there. Everything can be viewed either full screen or in a desktop window. A toolbox provides a search facility and a notebook whose contents can be saved before leaving the program.

### Day and night

Visiting the garden or park produces a picture of it, with an invitation to find the animals, and this is done by clicking on any of a number of named areas, such as lawn, hedge, tree, shed and even compost heap. There is also an option to hear the general sounds, which turn out to be exactly the same in both park and garden! Both scenes can be toggled between day and night, by clicking on the sun or moon, to see the different creatures active at each time. Each area has captioned pictures of the animals and insects which can be found there and clicking on a picture leads to a larger version of it, accompanied by information and icons which lead in turn to other photos, videos and sounds.

The cinema offers a choice of 40 short video clips but the low definition of Acorn's Replay system makes it difficult to see the detail in many of the smaller creatures. Sound quality was generally poor

and bird and animal calls difficult to recognise on my Risc PC, which does not have any hifi enhancements.

The animal expert, Mike, is introduced with a photograph and an offer to identify any unknown specimens you have seen. This is done with a series of questions on the lines of whether it has fur or scales and how many legs, and then a suggestion of possible identities.

In the library, you can refer to a wildlife database with more than 100 entries, learn how to classify animals into groups, read a short book list and attempt a quiz with two sets of questions.

### Snail racing

Finally, there is a directory of activity sheets in Draw format with suggestions for some enjoyable ways of learning about wildlife, ranging from bird watching to snail racing.

Being intended for children of primary school age, the information in Garden Wildlife is brief enough to be easily absorbed by them, rather than encyclopedic. It is all attractively designed and very professionally presented and nature lovers of all ages will find it enjoyable browsing, although its appeal to older users will be more as a picture book with interesting notes. Even so, any adults who do trespass in the garden may still learn some fascinating facts, such as that the champion breeder, the rabbit, can produce more than 20 young in a year but is well beaten for the productivity title by the common house mouse, which can have five to ten litters with about six young in each. ♦

**Mike - The Animal Expert**



Click Mike's picture to start

This is Mike. He knows a lot about animals.

If you have seen a wild animal in your garden or local park and you don't know its name, ask Mike.

Mike will ask you some questions about the animal.

Answer Mike's questions.



# Two PAL Encoders

## Stuart Bell

First of all, what is meant by a PAL encoder? "PAL" is the acronym for the way in which, in the UK, the TV is encoded in the signal broadcast by the TV transmitters and received in our homes. The technicalities need not concern us, save to note that other countries use different systems; France has SECAM, and USA has NTSC (commonly misinterpreted as "never twice the same colour"! ). However, the video signals which are produced by our computers use separate connectors for each of the main colours in our displays (Red, Green and Blue), and also extra lines for timing signals. Thus, no 'coding' is necessary, with the consequence that few TVs can directly display the output of a computer. (Some machines, including the A3010, do include the necessary encoding hardware to do this.)

My current project – which may well feature in a later Archive article – is to produce a fairly complex 'slideshow' display on my A310, and record it to a video recorder for easy repeated viewing. Hence, I needed a PAL encoder to take the signal from the video output of the computer and add the necessary PAL signals so that it could be recorded by the VCR. One further point: PAL encoders produce a *video* signal, not a UHF TV signal. That is, they can connect to a VCR or TV via their SCART or phono 'video i/p' sockets, not via the aerial socket. (The A3010 adds a modulator to its internal encoder to allow a TV aerial socket to be used.)

I bought one PAL encoder, and then Paul sent me another one for review. Hence, I was able to compare the two devices for this article.

### Pineapple PAL Coder PLC/3

As the name suggests, this is the third incarnation of an encoder designed specifically for Acorn machines. It comes in a standard beige plastic box 5" x 3" x 1", with inputs for the 15-pin video signal from your computer (a suitable lead is supplied – users of older machines will need a 9-15 pin adapter), and also a 7.5-12v DC power supply, for which a plug-in mains adaptor is supplied. Outputs are for the 15-pin video lead to your monitor, PAL

coded output via a BNC socket, and Y/C high quality output for use with S-VHS and similar equipment. I was not able to test the Y/C output. Switches are provided for selecting interlace on/off and standard/multisync monitors. Setting up the encoder is no problem. The two A4 pages of documentation are adequate and should enable all users of Acorn machines to get it working.

### Rombo VGA Buster (Pro)

This is nominally a PC-specific device, and I am grateful to the Archive reader who advised that it works OK with Acorn machines. Not surprisingly, it is very similar to the Pineapple unit, with similar inputs and outputs, but without the switches. The input signal lead is captive and, at 9" long, inconveniently short. The standard output socket is of the phono type – more practical for most users than Pineapple's BNC – and a phono-phono lead is supplied. The plug-in power supply is of fixed voltage and with a captive lead, which minimises the potential for silly mistakes in comparison with the one supplied by Pineapple. A disc of PC-specific software is supplied, but could not, of course, be used on my A310.

### The encoders in use

Both worked pretty well. Because they are simply encoding 'TV standard' video signals, they will only work with video modes that can be displayed on 'ordinary' (type 0) monitors. The obvious ones are 12 and 15 and their wider equivalents, 35 and 36. If your monitor is a multisync, VGA or SVGA that displays these modes in letter-box format, you will not be able to use your monitor at the same time as an encoder. (My old Phillips green screen monitor came out of the loft!)

The second thing to remember is that the inherent quality of TV images is not a patch on what we expect from even the cheapest colour monitor. For TV pictures, with images that lack the detail of, say, the RISC OS desktop, and are viewed from 8 feet away, that doesn't matter. When you compare the prices of 21" TVs and 21" high resolution monitors, it's hardly surprising. So, don't expect a wonderful, crisp 21" display on the family TV. The lack of

sharpness inherent in the TV tubes will show up, as will the loss of quality inherent in the PAL encoding process which intentionally sacrifices signal quality to enable the signal to be broadcast at all. I seem to recall that the bandwidth of a PAL signal is 8MHz: the effective bandwidth of an RGB 'TV standard' signal is roughly  $3 \times 16\text{MHz} = 48\text{MHz}$ . Six pints are squeezed into each pint pot, and the cost of the encoding is the loss of quality.

In testing, I found that two issues are of importance when evaluating the encoders. The less obvious one is that of *picture position*. Picture position controls are becoming less common on TVs, and you cannot assume that the encoded output from the encoders will centre the image on the screen. With the Rombo unit came a disc full of PC-specific software to fine-tune image position, but I couldn't use that. The default position wasn't bad but it wasn't quite centred. The Pineapple instructions explain how to tweak the horizontal picture position by turning an internal coil in the encoder. This worked well. For both units, I used the mode definition and tweaking software supplied with the Watford Electronics SVGA VIDC enhancer to produce tailor-made

modes that put the images *exactly* where I wanted them on the TV screens. Similar software is obtainable from PD libraries, and makes using the encoders much simpler. Particularly if you want to avoid black margins, which we don't normally expect on TVs, a way of centering the wide mode 36 is highly desirable.

Finally, there is the question of *image quality*. With both my 10" Matsui portable TV and my Sony VCR, the Pineapple PLC/3 produced visibly better results. The picture was sharper and had less colour bleed. It is not inconceivable that, with other equipment, the Rombo device would produce better images but that wasn't my experience. Given the Acorn-targeted nature of the Pineapple product and its documentation, I conclude that if you need a PAL encoder for use with your Acorn computer, then that's the one to go for. A disc with simple mode-tweaking software would enhance the product further, as would supplying a BNC-phono adaptor for the output socket.

The Pineapple PAL Encoder PLC/3 is available from Archive, price £104 inclusive. ♦

## Fact-File

*(The numbers in italic are fax numbers)*

Abacus Training  
Acorn Direct

29 Okus Grove, Upper Stratton, Swindon, Wilts, SN2 6QA.  
FREEPOST, 13 Dennington Road, Wellingborough, Northants, NN8 2BR.  
(01933-279300)

Acorn Computers Ltd

Acorn House, Vision Park, Histon, Cambridge, CB4 4AE. (01223-254254)  
(01223-254262)

Anglia Multimedia  
APDL

Anglia House, Norwich, NR1 3JG. (01603-615151) (01603-631032)  
39 Knighton Park Road, Sydenham, London, SE26 5RN.

Apricote Studios  
Atomwide Ltd

2 Purls Bridge Farm, Manea, Cambridgeshire, PE15 0ND. (01354-680432)  
7 The Metro Centre, Bridge Road, Orpington, Kent, BR5 2BE. (01689-814500)  
(01689-814501)

Avie Electronics (p8)  
AVP

7 Overbury Road, Norwich. (01603-416863) (01603-788640)  
School Hill Centre, Chepstow, Gwent, NP6 5PH. (01291-625439)  
(01291-629671)

Base5 Technical Graphics  
Clares Micro Supplies

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98 Middlewich Road, Rudheath, Northwich, Cheshire, CW9 7DA.  
(01606-48511) (01606-48512)

Colton Software

2 Signet Court, Swanns Road, Cambridge, CB5 8LA. (01223-311881)  
(01223-312010)



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|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Computer Concepts            | Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX. (01442-63933)<br>(01442-231632)                                                            |
| Creative Curriculum Software | 5 Clover Hill Road, Savile Park, Halifax, HX1 2YG. (01422-340524)<br>(01422-346388)                                                          |
| CWDE Software                | 1 Catton Street, London WC1R 4AB. (0171-831-3844) (0171-831-1746)                                                                            |
| Dalriada Data Technology     | 145 Albion Street, Kenilworth, Warwickshire, CV8 2FY. (01926-53901)                                                                          |
| Datafile                     | 71 Anson Road, Locking, Weston-super-Mare, Avon, BS24 7DQ.<br>(01934-823005)                                                                 |
| David Pilling                | P.O.Box 22, Thornton Cleveleys, Blackpool, FY5 1LR.                                                                                          |
| Digital Darkroom             | P.O.Box 550, Belvedere, Kent, DA17 5SL. (0181-311-2001)                                                                                      |
| DSL Supplies                 | St Margaret's Lane, Fareham, Hants, PO14 4BQ. (01329-841600)<br>(01329-841600)                                                               |
| EESOX                        | 5 Hillfield Road, Comberton, Cambridge, CB3 7DB. (01223-264242)                                                                              |
| Fabis Computing              | Sarford House, Swadlincote, Derbyshire, DE11 9SL. (01283-552761)                                                                             |
| Hampshire Microtechnology    | Connaught Lane, Paulsgrove, Portsmouth, Hants, PO6 4SJ. (01705-378266)<br>(01705-379443)                                                     |
| Hodge Electronic Services    | 16 Mold Road, Mynydd Isa, Clwyd, CH7 6TD. (01244-550803)                                                                                     |
| HS Software                  | 56 Hendrefolian Avenue, Sketty, Swansea, SA2 7NB. (01792-204519)<br>(01792-298283)                                                           |
| Icon Technology              | 9 Jarrom Street, Leicester, LE2 7DH. (0116-254-6225)                                                                                         |
| iSV Products                 | 86, Turnberry, Home Farm, Bracknell, Berks, RG12 8ZH. (01344-55769)                                                                          |
| Kudlian Soft                 | 8 Barrow Road, Kenilworth, Warwickshire, CV8 1EH. (01926-851147)                                                                             |
| Lambda Publications          | 194 Cheney Manor Road, Swindon SN2 2NZ. (01793-695296)                                                                                       |
| Longman Logotron             | 124 Cambridge Science Park, Milton Road, Cambridge CB4 4ZS.<br>(01223-425558) (01223-425349)                                                 |
| Minerva Systems              | Minerva House, Baring Crescent, Exeter, EX1 1TL. (01392-437756)<br>(01392-421762)                                                            |
| Net Electronics (p11)        | 3 Pinehill Court, Bangor, Co. Down, BS19 6SG. (01247-466686)<br>(01247-273172)                                                               |
| Northwest SEMERC             | 1 Broadbent Road, Watersheddings, Oldham, OL1 4LB. (0161-627-4469)                                                                           |
| Octopus Systems              | 9 Randwell Close, Ipswich, IP4 5ES. (01473-728943) (01473-270643)                                                                            |
| Oregan Developments          | 36 Grosvenor Avenue, Streetly, Sutton Coldfield, B74 3PE. (0121-353-6044)                                                                    |
| Pineapple Software           | Suite 13, South Park Business Centre, 310 Green Lane, Ilford, Essex IG1 1XT.<br>(0181-599-1476) (0181-598-2343) (sales@pinesoft.demon.co.uk) |
| Purple Software              | 59 Shakespeare Road, Walthamstow, London E17 6AS. (0181-531-8384)<br>(0181-531-8384)                                                         |
| Rombo Productions            | Baird Road, Kirkton Campus, Livingston, EH54 7AZ. (01506-414631)<br>(01506-414634)                                                           |
| S&S Computer Advice          | 8 Anchor Close, Hathern, Leicestershire, LE12 5HP. (01509-842670)<br>(01509-842670)                                                          |
| Sherston Software            | Angel House, Sherston, Malmesbury, Wilts. SN16 0LH. (01666-840433)<br>(01666-840048)                                                         |
| Sibelius Software            | 75 Burleigh Street, Cambridge, CB1 1DJ. (01223-302765) (01223-351947)                                                                        |
| Silicon Vision Ltd           | Signal House, Lyon Road, Harrow, Middlesex, HA1 2AG. (0181-422-3556)<br>(0181-248-3589)                                                      |
| Supreme Software Solutions   | 21 Courtenay Close, Chapel Break, Bowthorpe, Norwich, NR5 9LB.                                                                               |
| Zenta Multimedia             | 10 Ravenhurst Drive, Birmingham, B43 7RS. (0121-358-3054) (0121-358-5969)                                                                    |

**Norwich Computer Services** 96a Vauxhall Street, Norwich, NR2 2SD. (01603-766592) (01603-764011)  
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